SUMITOMO RECOMMENDED PROCEDURE

SRP SP-F04-047

FP72PVS Fiber Bundle Procedure for Single Fiber Termination Using a FB72FBK 900µm Breakout Kit

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1.0 General

1.1 This procedure describes the standard techniques for installing the Sumitomo Electric Lightwave (SEL) FutureFLEX (ABF) Air-Blown FP72PVS Fiber bundles containing 6 pliable ribbons into a FT72FBK Field Termination Kit with 900µm colored-coded furcation tubing.

1.2 The Field Termination Kits are used at locations where fiber bundles containing pliable Ribbon are to be terminated using Splice-On-Connectors (SOC) or other field terminated connectors. The terminated fibers can then be connected to fiber optic patch panels, switches, or transmitter / receiver locations.

2.0 Safety Precautions

2.1 Wear safety glasses when working with bare optical fibers / fiber ribbons.

3.0 Reference Documents

3.1 Sumitomo Recommended Procedure, *FutureFLEX 72 Fiber Bundle Stripping Procedure*, **SRP SP-F04-045**

3.2 Sumitomo Recommended Procedure **SRP-SP-F04-050** FP72PVS Ribbon Matrix Removal Procedure

4.0 Equipment / Tools Required

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

4.1 FP72PVS fiber bundle.

4.2 FT72FBK Field Termination Kit (Base Unit with Cover, (6) 900µ OD Assemblies, 2 blanks and a 4mm Bushing).

4.3 Adhesive Tape.

4.4 Measuring Tape.

4.5 MA-2-Kit and a Clean Work Surface / Table.

4.6 Wire Strippers/Needle Nose Pliers

5.0 Preparing the Fiber Bundle

5.1 FP72PVS fiber bundles consist of 6 X 12-count pliable ribbons enclosed in a PVDF outer jacket. Each 12 fiber pliable ribbon is numbered. **(See Fig. 2)**

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5.2 Remove a 60" length of PEF from the fiber bundle end.

5.2.1 Refer to **SRP SP-F04-045** for detailed techniques on how to remove the PVDF jacket. **(See Fig. 1)**

5.3 Refer to SRP-SP-F04-050 for detailed instructions on how to remove the ribbon matrix.

5.3.1 Use MA-2 kit to remove the ribbon materials from the 6 pliable ribbons to prepare them for installing into the breakout kit. **(See Figure 4 & 5)**

5.4 Once the ribbon matrix has been removed install the 4.0 mm bushing over the PEF jacket. Secure the fiber bundle to a work surface with adhesive tape.

5.5 Separate and organize the individual fibers to be inserted into the Field Termination Kit assemblies using the chart in **Figures 3A.**

Figure 1
72 Fiber bundle jacket stripping procedure
(Excerpt fromSRP-SP-F04-045)

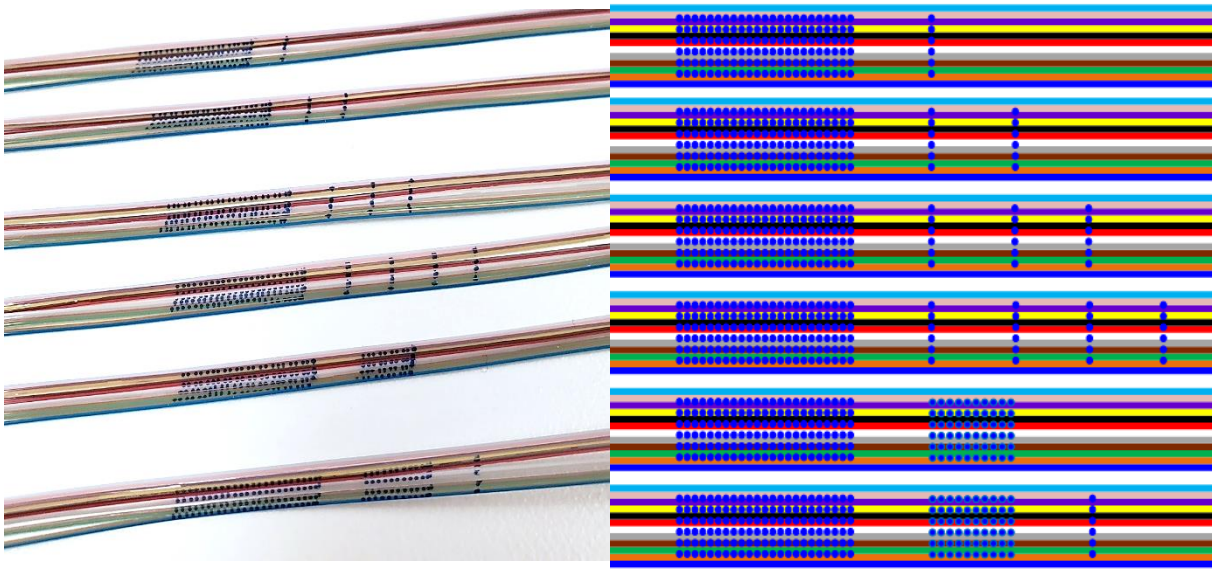

Figure 2
The Ribbons inside the PVDF jacket are numbered 1 – 6 starting with a long block for visibility of the markings, followed by a roman numeral style numbering system. Above you see a picture of the six ribbons in order from top to bottom

NOTE: Using the chart in **Figure 3** - insert the individual fibers for **Ribbon #1** into the **Blue** break out assembly, fibers in **Ribbon 2** into the **Orange** assembly, fibers in **Ribbon 3** into the **Green** assembly, fibers in **Ribbon 4** into the **Brown** assembly, fibers in **Ribbon 5** into the **Slate** assembly and fibers in **Ribbon 6** into the **White** assembly

Blue Sub-unit:1
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua
Orange Sub-Unit: 2
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua
Green sub-Unit: 3
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua
Brown Sub-Unit: 4
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua
Slate Sub-unit 5:
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua
White Sub-Unit: 6
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose and Aqua

Figure 3A
Each Breakout Assembly contains a ribbon with each of the 12 colored fibers shown above.

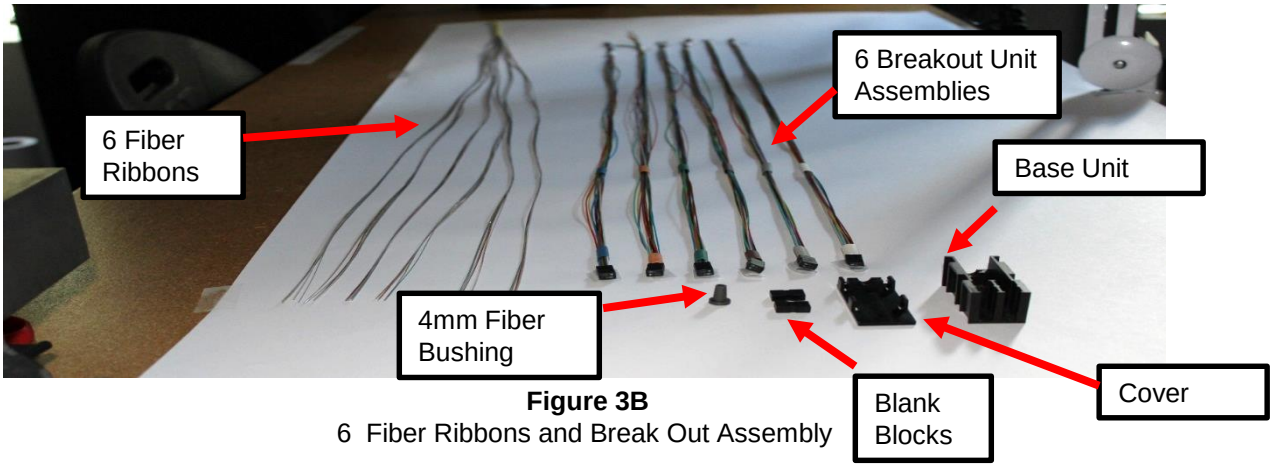

Figure 3B
6 Fiber Ribbons and Break Out Assembly

Figure 4
Removal of ribbon matrix (Excerpt from SRP-SP-F04-050)

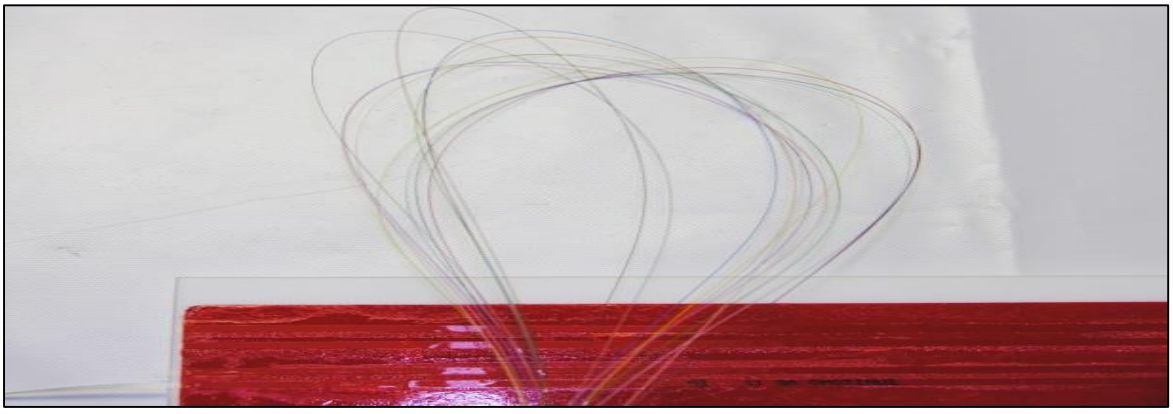

Figure 5
De-ribbonized fiber (Excerpt from SRP-SP-F04-050)

6.0 FT72FBK Field Termination Kit

6.1 FT72FBK Field Termination Kit consists of a Base Unit, Cover Unit, Six (6) Breakout Unit Assemblies, 12 colored marking tubing pieces (Blue, Orange, Green, Brown, Slate and White placed over assemblies), a 4.0 mm bushing, and 2 blanks, (**See Fig. 6)**

6.2 Base Unit cavity holds eight (8) stackable Breakout Unit Assemblies.

6.3 Breakout Unit Assemblies consist of six (6) rectangular black plastic break-out blocks, each with 12 color-coded 900µm OD tubing attached. 12 Fiber subunits are threaded through each tube, color-coded, then terminated using SEL splice on connectors. These units stack, one on top of the other, into the Base Unit cavities, 3 on each side with one blank on each side. **(See Fig. 9)**

6.4 The 4.0mm bushing secures the 72-fiber bundle in the Base and Cover Units preventing pullout.

6.5 The Cover and Base Unit snaps together, securing the Breakout Unit Assemblies and protecting the fibers.

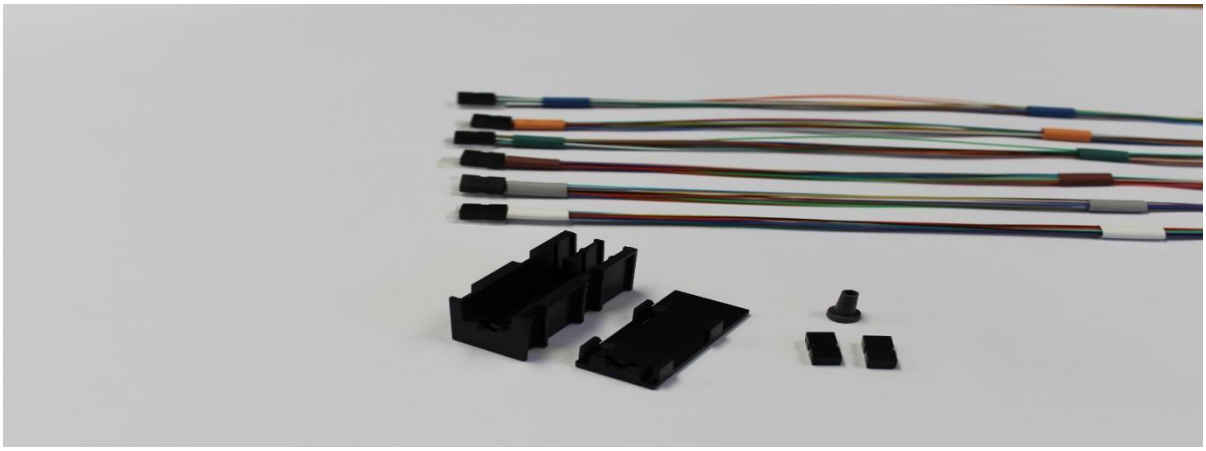

Figure 6
Breakout Kit Components and Specifications

Base Unit Specifications
Dimensions (in.): 2.25” L x 1.0” W x 0.6” H
Material: ABS Plastic
Color: Black
Logo: FTFLD72

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: 0.50 mm
OD: 0.90 mm
Length: Approximately 24 inches

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

7.0 Assembling the Field Termination Kit

7.1 Prepare the six pliable ribbons and the Breakout Assemblies as depicted in **SRP SP-F04-045.**

7.2 Install the 4.0mm bushing directly onto the PVDF jacket.

7.3 Select ribbon 1 to begin. Insert all 12 fibers into the Blue Breakout Assembly. Work carefully, comb the fibers to ensure that none are crossed or twisted. (**See Fig. 7)**

7.4 Repeat the process with the remaining 5 pliable ribbons.

7.5 Once all the fibers of the six ribbons are inserted into the tubes, carefully grasp and push all fibers through each Breakout Unit Assembly tubing as a group

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7.6 Once all fibers are inserted into Breakout Unit Assemblies re-confirm that fiber s are not crossed or twisted over each other in 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. **See FIG. 8**

7.7 Carefully place the Breakout Unit Assemblies into the Base Unit cavity. (Blue, Orange Green and Brown Slate & White) to maintain correct color-order sequence. **See Fig. 8.**

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 3.6mm bushing.

7.9 Slide the 8 colored heat Shrink Tubing pieces into position over the corresponding break out assemblies. See **Fig 8.**

7.10 Complete the FT72FBK Field Termination Kit assembly by snapping Cover Unit onto Base Unit. **see Fig. 9.**

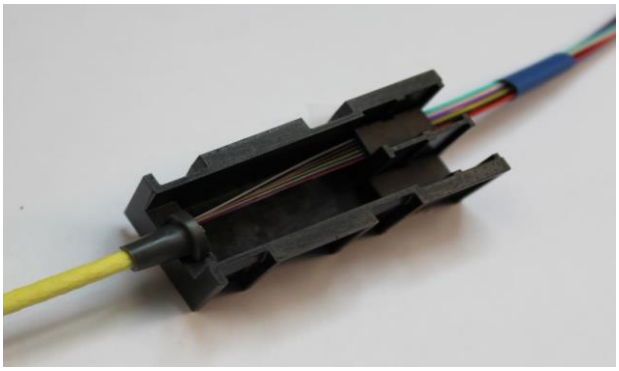

Figure 8
1st Assembled Blue Block inserted into Base Unit

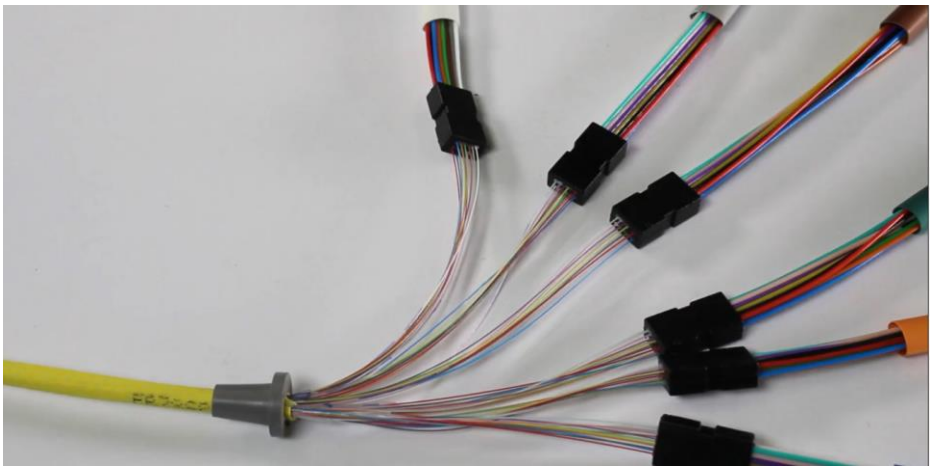

Figure 7
12 Fibers inserted into 900 µm subunit Break out Assembly according to the chart in Figure 3A.

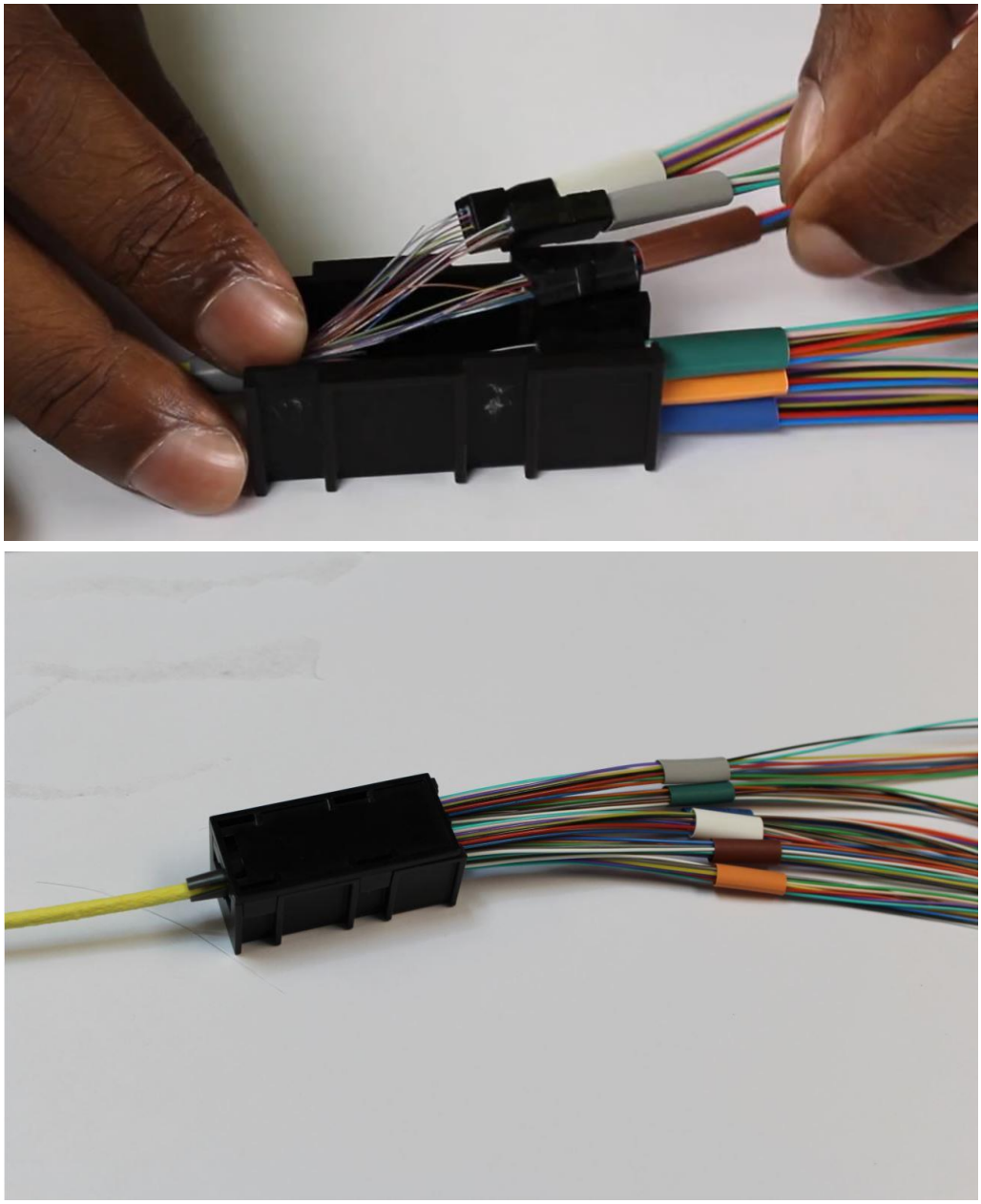

Figure 9
72 Fiber Breakout Kit fully assembled except for the cover unit