

## SUMITOMO RECOMMENDED PROCEDURE

### SRP SP-F02-028

#### Interlocking Armor Indoor Ribbon Riser Cable Preparation

<u>PARA.</u>	<u>CONTENTS</u>
1.0	General
2.0	Safety Precautions
3.0	Reference Documents
4.0	Tools Required
5.0	Cable Preparation



**SUMITOMO ELECTRIC LIGHTWAVE CORP.**

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

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

[www.sumitomoelectric.com.com](http://www.sumitomoelectric.com.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

This procedure describes the standard techniques for preparing LITEPIPE™ Ribbon - Indoor Riser fiber optic cable for placing and use in splice or termination shelves. This product utilizes a single central polyvinyl chloride buffer tube designed to accommodate up to twenty-four 36 fiber ribbons. Two layers of dielectric strength elements are stranded around the central tube to provide tensile strength. All of this is covered by a polyvinyl chloride jacket. The cable core is protected by a Riser rated sheath and interlocking armor.

## 2.0 Safety Precautions

2.1 The use of safety equipment is strongly recommended during the installation and handling of optical fiber cable.

2.2 To protect the hands, gloves are recommended when handling the interlocking armor.

## 3.0 Reference Documents

**SP-F01-002** Installing Cable Pulling Grip

**SP-F01-002A** Grip Addendum for Ribbon Cables

**SP-F02-007** Ribbon Access Procedures

**SP-F02-011** Ribbon Splitting Procedure

## 4.0 Tools Required

The following is a list of tools and materials required to complete this procedure.

1. Tape Measure
2. Utility Knife
3. Splicer's Scissors
4. Marking Pen
5. UCTS-001 Universal Central Tube Slitter
6. Ripley's RCS-114 or RCS-158 Cable Stripper
7. Armor Splitting Tool
8. Needle Nose Pliers
9. Gloves
10. Safety Glasses

## 5.0 Cable Preparation

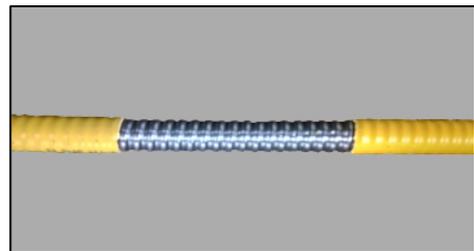
### 5.1 Interlocking Armor Removal

This procedure involves opening a window in the sheath at the desired distance from the cable end, exposing the interlocking armor and then sliding the armor and sheath off to expose the inner core cable. Refer to step by step instructions below.

5.1.1 Measure and mark the appropriate length of cable to be cleaned back for the particular application (splicing: typically 8 feet, pulling eyes: 6 inches).

5.1.2 Using the Ripley's RCS-114 or RCS-158 Cable Stripper, ring cut the jacket once at the mark and again approximately 6 inches towards the cable end.

5.1.3 Using the Ripley's RCS-114 or RCS-158 Cable Stripper, cut between the two ring cuts. Using pliers, remove the outer jacket between the two ring cuts.



**Figure 1**

5.1.4 Using the armor splitting tool, place cable in the cable guide, tighten the thumbscrew. Rotate the handle until the armor is cut. The armor splitting tool is designed to cut through with only one revolution of the cutter to protect the fiber cable inside.

**Note:** For cable armor diameters 1" or larger used the motorized cutter in figure 3.

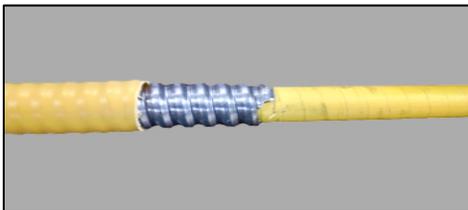


**Figure 2**

**Figure 3**

5.1.5 Separate the armor by using a twisting motion to access the fiber cable inside.

5.1.6 Be sure to leave enough armor on the inside end for grounding.

**Figure 4**

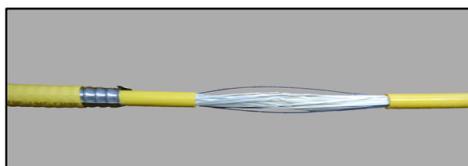
## 5.2. Inner Core Cable Sheath Removal

This procedure involves opening a window in the sheath at the desired distance from the cable end, exposing the central tube, ring cutting the central tube and then sliding the tube, strength elements and jacket off to expose the optical fiber ribbons. Refer to step by step instructions below.

5.2.1 Measure and mark the appropriate length of cable to be cleaned back for the particular application (splicing: typically 8 feet).

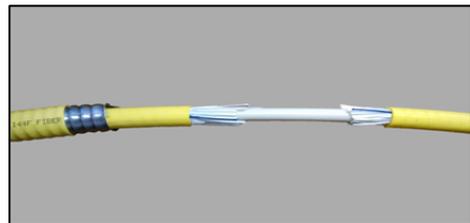
5.2.2 Using the Ripley's RCS-114 or RCS-158 Cable Stripper, ring cut the jacket once at the mark and again approximately six inches towards the cable end.

5.2.3 Using the Ripley's RCS-114 or RCS-158 Cable Stripper, make two longitudinal cuts along the sheath 180° apart between the two ring cuts. Using pliers, remove the two jacket halves between the ring cuts.

**Figure 5**

5.2.4 Midway along the exposed area, cut all of the dielectric strength elements with electrician's scissors. If required, be sure to leave enough rigid FRP tape length on the inside end for fixing in a closure or termination box (refer to appropriate procedures for necessary lengths).

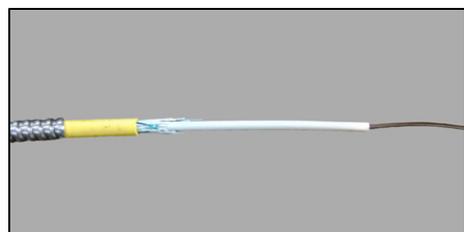
5.2.5 Cut the buffer tape layer at both ends of the opened window and remove it to expose the tube underneath.

**Figure 6**

5.2.6 Since this inner core cable construction contains no metallic elements, grounding is not necessary.

5.2.7 Using a standard buffer tube remover or UCTS-001 tool, ring cut the central tube leaving the appropriate length at the cable end (typically 2-4 inches). Score the tube, cutting ~3/4 of the way through the plastic. Avoid cutting completely through the plastic as this may damage the optical fiber ribbons. Bend the tube gently at the score to cleanly separate the tube.

5.2.8 Carefully slide the tube, strength elements and jacket off to expose the optical fiber ribbons.

**Figure 7**

## 5.3. Mid-span Access

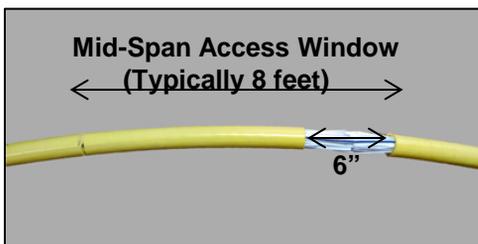
This procedure involves opening a window in the sheath at the desired distance from the

cable end, exposing the central tube, ring cutting the central tube and then sliding the tube, strength elements and jacket off to expose the optical fiber ribbons. Refer to step by step instructions below.

5.3.1 Measure and mark the appropriate length of cable to be cleaned back for the particular application (splicing: typically 8 feet).

5.3.2 Using the Ripley's RCS-114 or RCS-158 Cable Stripper, ring cut the jacket once at the mark and again approximately six inches towards the cable end.

5.3.3 Using the Ripley's RCS-114 or RCS-158 Cable Stripper, make two longitudinal cuts along the sheath 180° apart between the two ring cuts. Using pliers, remove the two jacket halves between the ring cuts.



**Figure 8**

5.3.4 Using a blunt edged object such as the pliers, grab each ripcord located along the strength elements and slit open the remainder of the jacket between the two marks.

NOTE: Sometimes providing a notch in the jacket edge with a utility knife will help the ripcord get started. Remove the jacket between the two ring cuts.

5.3.5 Cut the strength elements at both ends of the window with the splicer's scissors. If necessary, leave enough rigid FRP tape length for anchoring the cable within a splice closure or termination box (typically 6 inches).

5.3.6 Cut the buffer tape layer at both ends of the opened window and remove it to expose the tube underneath.

5.3.7 Choose appropriate UCTS-001 blade setting based on tube size below according to Table 1.

5.3.8 Find the appropriate tube size according to Table 1. Please refer to Sumitomo instructions for UCTS tool for blade depth settings. Note: These are approximate blade depth settings. Perform a test cut before proceeding. Score the tube 1" away from the end of the cable armor, cutting approximately 3/4 of the way through the plastic. Avoid cutting completely through the plastic as this may damage the fibers. Bend the tube gently at the score to cleanly separate the tube.

Tube	Fiber Count	ID/OD (mm)	Tube Slitter
"N"	12 - 96	6.1/7.9	UCTS-001 Dial Setting 2.05 Small Slitting Channel
"O"	108 - 216	8.5/10.3	UCTS-001 Dial Setting 2.25 Small Slitting Channel
"P"	240 - 432	12.8/14.8	UCTS-001 Dial Setting 0.25 Large Slitting Channel
"R"	576 - 864	16.6/18.6	UCTS-001 Dial Setting 1.25 Large Slitting Channel

**Table 1**

5.3.9 Adjust slitter's blade depth with supplied instructions. If the blades fully penetrate the tube wall, there is a chance of damaging the ribbon fibers. The correct dial gauge sets the blades' depth for the exact wall thickness. NOTE: Always reset blade depth back to "0" setting when changing tube sizes. Always make a test cut before proceeding.

5.3.10 Make a longitudinal cut in buffer tube with slitter. Make sure to hold steady pressure on the UCTS tool to ensure that the tube is properly cut.

5.3.11 Carefully snip away both tube halves. An additional ring cut with the buffer tube remover can be made to obtain a smoother end.

5.3.12 The 12 fiber ribbons are now exposed and ready for mass splicing. For the 24 fiber ribbons, please refer to Sumitomo Recommended Procedure SP-F02-011 *Ribbon Splitting Procedure (RS-24)*.