

RECOMMENDED Procedure

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SP-F02-004 LITEPIPE™-ARMORLUX™ Sheath Cable Preparation, Issue 5

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1.0 General

This procedure describes the standard techniques for preparing LITEPIPE™-ARMORLUX™ sheath fiber optic cable for placing and use in splice or termination closures. This product utilizes the LITEPIPE™ tube, a single central buffer tube designed to accommodate 2-72 loose fiber bundles, 18 (12 or 24 fiber) ribbons, or up to twenty-four 36-fiber ribbons. The tube is protected by a corrugated steel armor. Two steel wires are longitudinally laid 180° apart along the armor to provide tensile strength. A polyethylene jacket covers all of this.

2.0 Safety Precautions

2.1 The use of safety equipment is strongly recommended during the cable preparation procedure. This includes the use of protective clothing and eyewear.

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

3.0 Reference Documents

Sumitomo Recommended Procedures:

SP-F01-002 *Installing Cable Pulling Grip*

SP-F03-001 *Installing Fiber Unit Splitter*

4.0 Tools Required

The following tools and materials are required to complete this procedure.

1. Tape Measure
2. Utility Knife
3. Wire Cutters
4. Paper Towels

5. Marking Pen
6. Cable cleaner or solvent
7. Buffer Tube Remover / Coaxial Cutter
8. Approved Ground Terminal
9. Needle Nose Pliers
10. Talcum Powder
11. PVC Buffer Tubes
12. Fiber Unit Splitter
13. Gloves
14. Safety Glasses
15. Gauze Pads

5.0 Sheath Removal

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

5.2 With the utility knife, ring cut the jacket once at the mark and again approximately 12 inches towards the cable end.

5.3 By bending the cable, the location of the two steel wires can be determined.

5.4 Using a sharp utility knife, shave off the jacket material over the two wires between the two ring cuts. Using pliers, remove the remaining jacket between the two ring cuts.

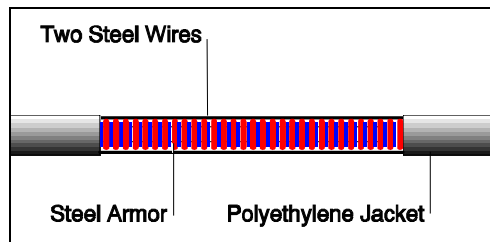


Figure 1.

5.5 Midway along the exposed area, cut both steel wires with wire cutters. Be sure to leave enough wire on the inside end for grounding or pulling eye attachment (refer to appropriate procedures for necessary lengths). Bend back the wires to expose the corrugated armor.

5.6 Open a window in the steel armor by scoring the armor with the utility and peeling it off with needle nose pliers. This will expose the ripcord underneath the armor.

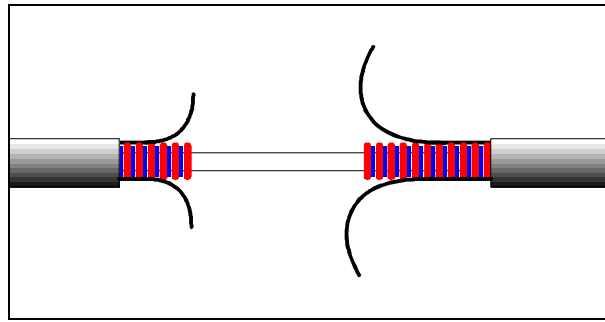


Figure 2.

NOTE: For most pulling eye installations, the armor, tube and fibers can be cut away leaving only the two steel wires for attachment. Follow procedures for pulling eye attachments.

5.7 Scrape off the plastic coating on the steel armor with a utility knife. This will allow for proper grounding connections.

5.8 If local grounding practices require, make a small cut in the armor adjacent to the ripcord and slit approximately 1 to 1.5 inches of the armor to provide a grounding access.

5.9 Cut away the excess ripcord.

5.10 Using a standard buffer tube remover, 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 fibers. Bend the tube gently at the score to cleanly separate the tube.

5.11 Carefully slide the tube, armor, wires and jacket off to expose the optical fibers.

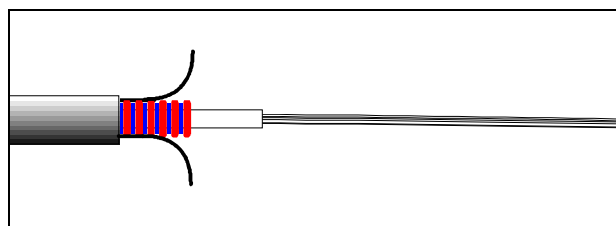


Figure 3.

6.0 Fiber Unit Identification and Routing

LITEPIPE™ cables may contain fiber bundles or ribbons. Procedures for unit identification and routing for each type of fiber unit is provided below.

6.1 Fiber Bundles

6.1.1 For LITEPIPE™ cables containing more than 6 fibers, the fibers will be grouped together by uniquely colored thread binders. For routing these fibers through closures, a unit splitter may be necessary. The unit splitter acts as an intersection where all the fibers coming from the cable's single tube are split up and placed into smaller tubes. See SP-F03-001 for further details on installing unit splitters.

6.1.2 IMPORTANT: Before wiping the fibers to remove excess jelly, the fiber units need to be identified and separated. To do this, first have a second person hold the cable or clamp the cable to a workbench. The use of D-Gel[®] cable cleaning solvent or isopropyl alcohol to remove filling compound is recommended with a lint free wipe or cloth.

6.1.3 Carefully straighten out the fibers and locate one of the thread binders at the free end.

6.1.4 While keeping a small amount of tension on the fibers, pull on the tread binder until the fibers bound by that binder pull away from the other fibers. Carefully separate that fiber bundle from the others.

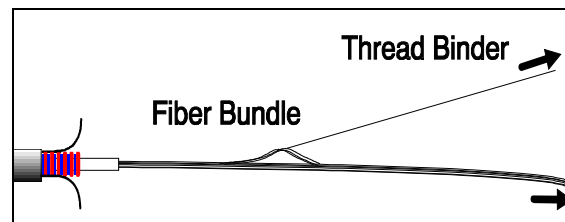


Figure 4.

NOTE: Typically a minimum of 1 meter of fiber needs to be exposed in order to separate the bundles.

6.1.5 Repeat step 6.14 until all fiber bundles have been separated.

6.2 Ribbons

Each ribbon contains individual fibers that are held together by a matrix encapsulant. Multiple ribbons are stacked adjacent to one another within the LITEPIPE[™] tube. Individual ribbons can be easily removed from the stack and handled. Each ribbon has a unique marking code to provide unit identification.

6.2.1 Ribbon Cleaning

6.2.1.1 At no time during the cleaning operation should the ribbon be bent beyond its minimum bending radius. Do not wrap the ribbon around your finger.

6.2.1.2 Remove the bulk of the filling compound by carefully wiping each ribbon individually with a dry lint free wipe or cloth.

6.2.1.3 Soak a lint free wipe or cloth with filling compound remover and then carefully wipe each ribbon twice using medium pressure.

6.2.1.4 Any residual filling compound should then be removed using dry lint free wipes or cloth. The use of D-Gel[®] cable cleaning solvent or isopropyl alcohol to remove filling compound is recommended. Always be

sure to remove any leftover solvent from the ribbons with a dry lint free wipe or cloth.

6.2.1.5 Allowing ribbons to remain in contact with solvents for an extended time could potentially cause damage to the ribbon matrix or fiber coating

NOTE: Vigorous cleaning of the ribbon stack or multiple ribbons at the same time can create excessive twisting or crushing forces which can potentially damage the ribbon structure. Detailed cleaning should be performed on individual ribbons.