

## Loose Tube Cable End Preparation for Splicing

For Series 11D, 1GD, 12D, 1AD, 1DD, 1CD,  
11, 1G, 12, 12L, 1A, 1D, 1C, 1NY, 13, 1H, HZD and HZA

**NOTE:** These installation instructions have been written for qualified, experienced personnel. Please read them thoroughly before starting assembly work. Superior Essex disclaims any liability or responsibility for the result of improper or unsafe installation practices.

This procedure details the steps to be taken in order to prepare the ends of a Superior Essex Loose Tube Optical Fiber Cable for splicing. The cable may be a "dry" type cable design or a gel flooded design. This procedure does not include methods to prepare and splice the fiber or splice testing. Cable end preparation and splicing must be performed by personnel who are trained and familiar with handling optical fiber cables, cable components, and splicing accessories. Mishandling of fiber cables can cause damage to the fiber and result in cable length cuts or system degradation.

This procedure applies to the following Superior Essex Loose Tube Optical Fiber Cable Series:

- Dri-Lite® Loose Tube Single Jacket All Dielectric, Series 11D
- Dri-Lite Loose Tube Double Jacket Non-Armor, Series 1GD
- Dri-Lite Loose Tube Single Jacket Single Armor, Series 12D
- Dri-Lite Loose Tube Double Jacket Single Armor, Series 1AD
- Dri-Lite Loose Tube Double Jacket Double Armor, Series 1DD
- Dri-Lite Loose Tube Triple Jacket Double Armor, Series 1CD
- Loose Tube Single Jacket All Dielectric, Series 11
- Loose Tube Double Jacket Non-Armor, Series 1G
- Loose Tube Single Jacket Single Armor, Series 12
- Loose Tube Single Jacket Single Armor, Series 12L
- Loose Tube Double Jacket Single Armor, Series 1A
- Loose Tube Double Jacket Double Armor, Series 1D
- Loose Tube Triple Jacket Double Armor, Series 1C
- Loose Tube Single Jacket All Dielectric Nylon, Series 1NY
- Loose Tube Indoor/Outdoor, Series 13
- Heavy Duty Loose Tube, Series 1H
- Loose Tube Single Jacket All Dielectric Indoor/Outdoor LSZH, Series HZD
- Loose Tube Single Jacket Single Armor Indoor/Outdoor LSZH, Series HZA

## Materials Required



- |   |  |  |
|---|--|--|
| 1. Tape measure   | 5. Needle nose pliers<br>(preferably with<br>rounded side edges) | 9. Hook-blade razor knife                      |
| 2. Yellow china marker<br>(or equivalent) for<br>marking cable jacket | 6. Cable snips   | 10. Lint-free wipes<br>(for gel-filled cables) |
| 3. Aramid shears  | 7. Rotary cable splitter   | 11. Alcohol or gel cleaner                     |
| 4. Diagonal cutters   | 8. Fiber tube scorer   | 12. Safety glasses                             |
|   |  | 13. Gloves                                     |

## Getting Started

Proper safety requirements should always be followed and local practices maintained. It is recommended that the installer wear protective eye gear and gloves during many of the installation steps to avoid the possibility of bodily injury.

Ensure all required materials are on hand. It is recommended that the processes of cable end preparation, fiber splicing, and splice closure assembly be performed from beginning to end with minimal interruption. If for any reason actions are interrupted, ensure fiber cable end and fibers are adequately protected.

## Procedure

1. Determine end location of cable where the splice point is to be located.

*NOTE: If the cable has multiple jackets, they must be removed in order using steps 1 through 10, repeating as necessary.*



2. Adjust the cutting depth of the rotary cable splitter to approximately 90% of the jacket thickness. If the cable is armored, adjust the blade to cut through the jacket and score the armor. Ring cut the jacket/armor approximately 3 to 4 inches (75 - 100 mm) from the end of the cable.



3. Flex the cable slightly at the cut to complete the opening of the jacket. If necessary, adjust the cutting depth and repeat the process until the end piece of jacket/armor can be pulled off the end of the cable.



4. Measure and mark the length of cable to be stripped according to the manufacturer's recommendations for the splice/termination system being utilized.



5. Using the final cutting depth determined in the previous step, ring cut the jacket/armor at the mark, and flex the cable slightly to complete the opening of the jacket.



6. Locate a rip cord below the jacket or armor at the end of the cable. There will be one or two rip cords (typically yellow, blue, orange or red, depending on the cable type) that will be a different color from the white yarns utilized in the cable. Also, the rip cord(s) will be longitudinally applied just under the jacket or armor rather than wrapped around the cable core.



7. Using the diagonal cutters, cut a notch in the jacket/armor next to the rip cord(s).



- Using rounded-edge needle-nose pliers, grab the end of a rip cord, wrap the rip cord around the pliers' jaws, and rotate several turns. The ripcord will bite into the jacket and armor for an easier start. After about a half of an inch, unravel cord and rewrap it to form a T-handle on the pliers as shown in this photo. Pull the rip cord down the length of the cable to the ring cut created in Step 5.

*NOTE: Rounded edges on pliers will prevent the pliers from cutting through the rip cord during initial pulling.*



- If two rip cords exist under the jacket, repeat for second rip cord to split the jacket.
- Remove the jacket material to expose the cable core. For single rip cord cables, gently pull the cable core through the opening created by the rip cord. Do not exceed the cable's minimum bend radius.



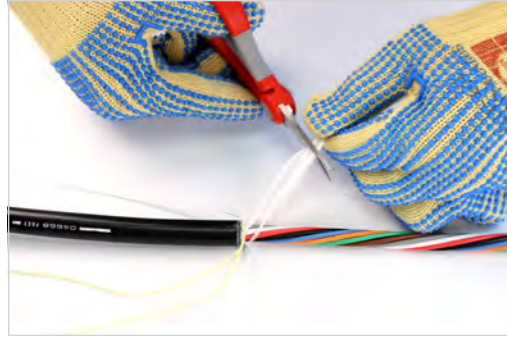
- With the aramid shears, cut off the strength yarns, ripcords, water blocking tape and binder yarns, leaving about 12 inches (30 cm) of yarns from the end of the jacket (these yarns will be cut to length during assembly of the splice closure). Be careful not to cut any of the buffer tubes.



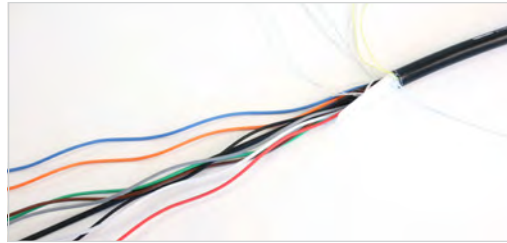
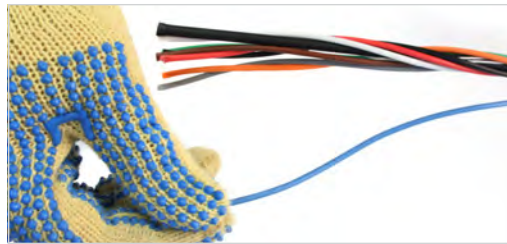
- Using the hook-blade razor knife, cut the helically-applied binder yarns at approximately 3" (75 mm) intervals.



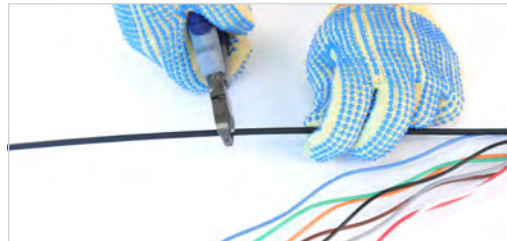
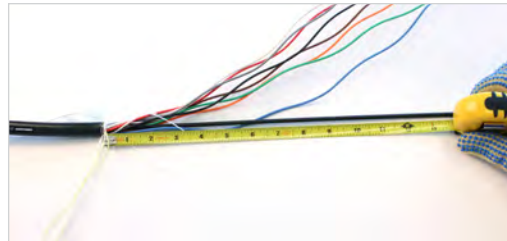
13. Starting near the cable end, slide the binder yarns off the end of the cable and work towards the cable jacket until the binder yarns have been removed to within 3" (75 mm) of the jacket.



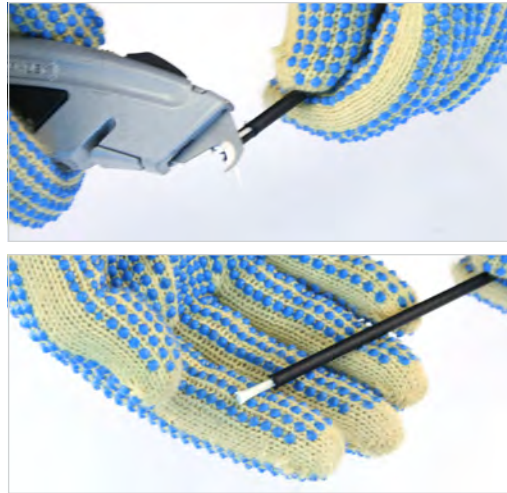
14. Carefully separate the buffer tubes from the core one at a time. Be careful not to kink the tubes during handling. If the tubes are covered with flooding gel, clean them with an appropriate gel remover.



15. With the diagonal cutters, cut off the central strength rod leaving about 12" (30 cm) from the end of the jacket (the rod will be cut to length during assembly of the splice closure). Be careful not to cut any of the buffer tubes.



16. It may be necessary to remove some outer coating off of the strength member in order for the strength member to fit into the closure strength member bracket.



17. Review manufacturer's assembly instructions for the splice closure to be used. Follow the splice closure assembly instructions to build the closure unit, attach the cable ends, and fabricate the end seal around the cables to be spliced. Repeat the above steps for all cables that are planned to enter the closure so that closure end plate seal and fabrication are complete.
18. If the cable is armored, bond the armor of each end of the cable to an approved ground via a suitable bond clamp or shield connector. Follow the manufacturers' instructions. It may be necessary to use the rip cords to split more of the jacket/armor in order to install the bond clamp or shield connector.
19. To breakout fibers from the buffer tubes, ring score a tube at approximately 36" (1 m) for fiber splicing and tray storage. Gently flex the tube at the score location to complete the opening of the tube. Pull the free tubing off to expose the fibers.

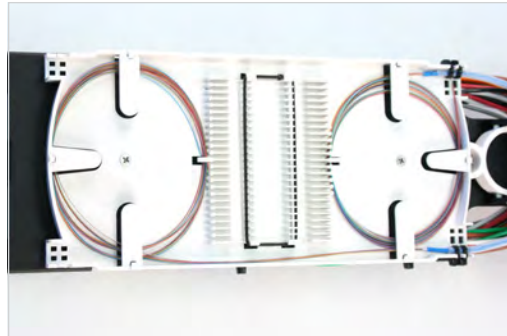


20. Use dry, lint-free wipes to remove the PFM™ buffer tube gel from the exposed fibers. Begin near the buffer tube and work toward the fiber ends.

If desired the fibers may be wiped with a reagent-grade 99% isopropyl alcohol-soaked wipe to remove any remaining gel residue.



21. Follow closure assembly instructions and build specifications to route the buffer tubes to the appropriate splice tray.



22. Prepare and splice fiber per the instructions of the applicable splice/equipment manufacturer. Store fiber splice and excess fiber in splice tray per closure manufacture instructions.

For Superior Essex Splice Closure information and installation procedures, please visit our website at <http://ce.superioressex.com/>. Under the Resources tab, you will find installation guidelines and videos for Superior Essex optical fiber splice closures.