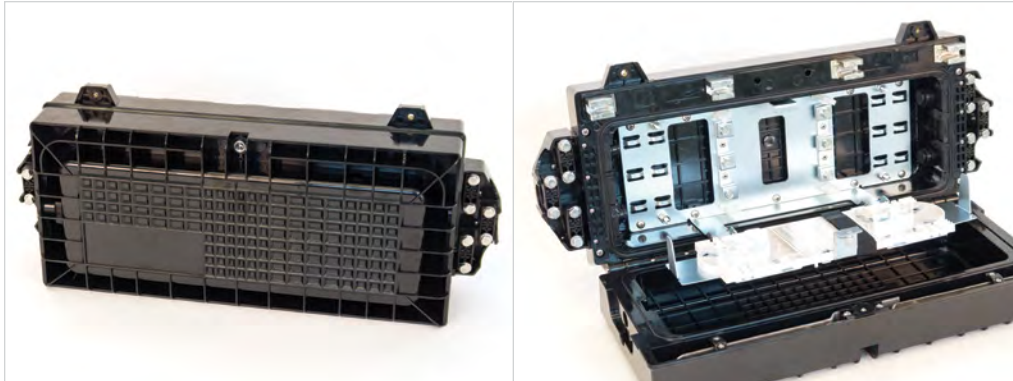


Fiber In-Line Splice Closure (FI2)

Installation Guideline



Introduction

This document provides installation instructions for Superior Essex Fiber In-line splice Closures (FIC) for aerial, direct-buried or below-grade OSP fiber deployment.

For Part Numbers:

- FI2-BD100 (Type B)
- FI2-CD100 (Type C)

Superior Essex fiber splice closures provide optimum environmental protection for the splicing, management and storage of fiber for aerial, direct-buried and below-grade applications. These closure systems offer fast and easy installation, maintenance and management from central office to the customer's premises for Outside Plant (OSP), passive networks.

This installation guide assumes that the closure installer is experienced in fiber cable preparation, splicing, management and other associated techniques.

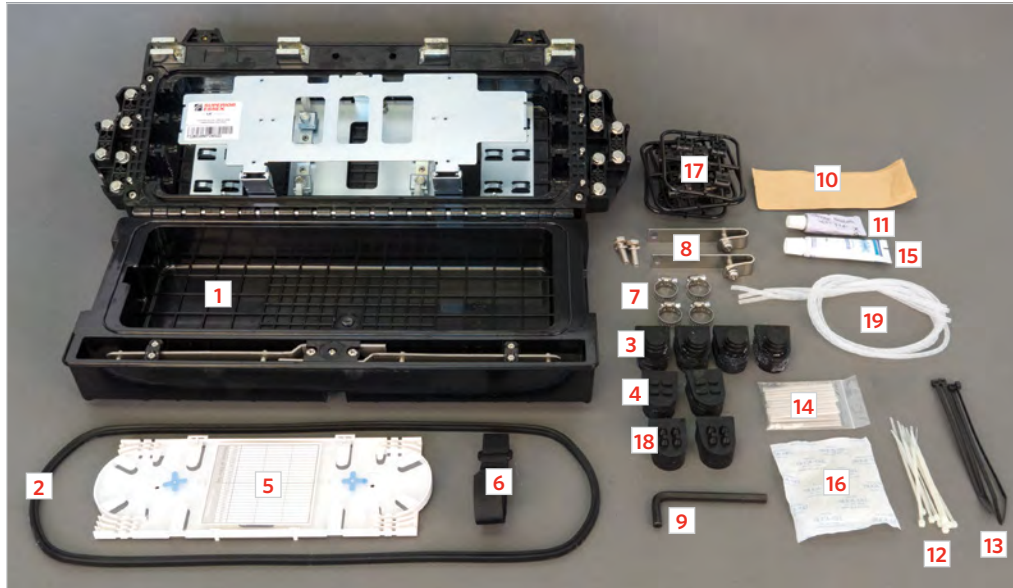
These closures can be prepared and installed from an aerial, strand-mounted position or on the ground, in a splicing tent or trailer.

Recommended Installation Tools

- Cable cutters
- Sheath splitter
- Shears
- Needle-nosed pliers
- Phillips-head screwdriver
- 216C tool with 7/8" and 7/16" sockets
- White marking pen

Components

Inventory the contents of the closure product using the image and its respective components table. If any parts are missing or damaged, contact Superior Essex Technical Support at 1.800.551.8948.



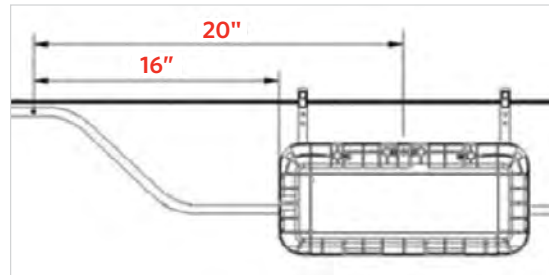
COMPONENTS

No.	Item	Unit	Quantity	Remarks
1	Closure body set	set	1	
2	Main gasket	each	1	
3	Entry gaskets (8 mm to 21 mm)	each	4	Factory installed
4	Entry gaskets (4 flat drop - 4.5 mm x 8 mm)	each	2	
5	Splice tray	each	1	
6	Tray band (Velcro)	each	1	
7	Cable retention clamps (22 mm)	each	4	
8	Aerial hanger kit	set	1	Plastic bag: S1
9	¼ inch hex Allen tool	each	1	
10	Silicon tape 150 mm	each	1	
11	Silicon sealant	each	1	
12	Cable ties (100 mm)	each	8	Plastic bag: S2
13	Cable ties (150 mm)	each	4	
14	Splice sleeves	each	24	
15	Vacuum grease	each	1	
16	Silica gel	each	1	
17	Cable holders	set	4	Plastic bag: S3
18	Entry gaskets (4 round drop - 3 mm to 7 mm)	each	2	
19	Spiral tube	each	4	

Procedure

STEP 1: Cable Allowance for Aerial Installation

- 1.1 For cable stub-in or loop-thru applications, it is recommended that the sheath be stripped or opened 72" to 96", for adequate internal slack for fiber splicing and management.
- 1.2 Allow approximately 16" of cable sheath from the cable/messenger wire lashing to each end of closure or approximately 20" to the center of the closure, as shown in the diagram.



STEP 2: Opening Closure

- 2.1 Insert the 1/4" hex Allen wrench into the square-headed nut and turn the wrench counter-clockwise one half turn, until the closure halves pop open.



STEP 3: Installing Aerial Hangers

- 3.1 Using the two (2) aerial hanger arms and two (2) 7/16" hex bolts provided, fasten the hanger arms to the hanger supports on top of the closure.



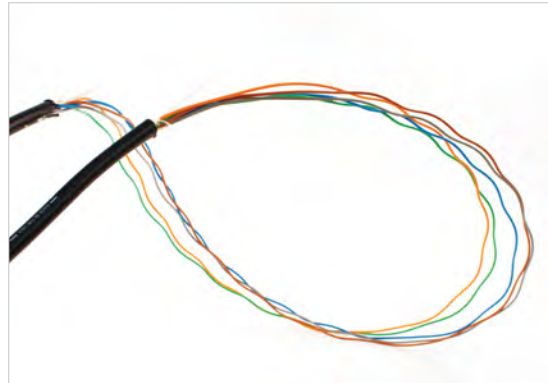
- 3.2 The closure can now be suspended from a cable or messenger wire, to install and prepare the fiber cable.

- 3.3 If the closure will be prepared on the ground, from a tent or trailer, provisions should be made to firmly secure the closure while cable is installed, spliced and stored.



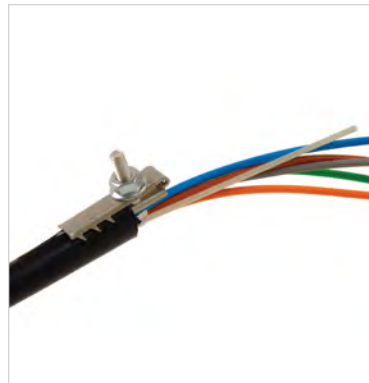
STEP 4:
Cable Preparation

- 4.1 For cable stub-in or loop-thru applications, the sheath should be stripped or opened from 72" to 96". The photo above illustrates a loop-thru sheath opening.
- 4.2 Unwrap, clean and separate the buffer tubes and strength members.
- 4.3 Cut the strength members to 3 inches.



STEP 5:
Cable Sheath Bonding
(for Loop-Thru)

- 5.1 Install a locally-approved bond shield connector (not provided).
- 5.2 For stub-in cable applications, the bond connector should be installed after the cable is pulled through the end grommet, to prevent damage to the end grommet seal.



STEP 6:
Preparing End Gasket
(Loop-Thru)

- 6.1 Remove the main closure sealing gasket. Note that the flat side of the gasket is facing upward, for future reinstallation.
- 6.2 Identify the diameter of the cable and refer to Table 1 to determine which concentric cone of the end grommet must be cut.



- 6.3 Remove the grommet retention holder by removing (4) Phillips-head screws.



- 6.4 Remove the cable retention clamp for cable being installed. Leave all others in place if not being used.



- 6.5 Remove the cable end grommet from the closure by firmly pulling upwards. Cut the appropriate sized concentric cone of the grommet with shears. Refer to Table 1 for diameters.



- 6.6 Because the cable cannot be pushed through the end grommet on loop-thru applications, the end grommet must be cut from its top side to install the cable. Using a razor knife, make a clean cut from the top side of the grommet to the cable entry hole.



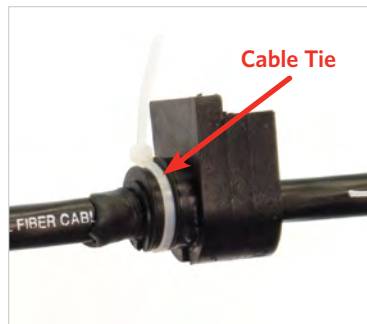
- 6.7 To ensure a proper seal between the cable and end grommet, cut a 1.5" strip of silicone tape from the sheet and wrap the tape around the cable one time. Flatten the silicone tape with fingers for consistent thickness.



- 6.8 Apply a generous amount of black silicone sealant around the end grommet cut and adjacent cable sheath (taped).



- 6.9 Place cable through the cut on the bottom side of end grommet. To ensure a weatherproof seal, a cable tie should be tightly fastened around the concentric hole of the end grommet and cable. Use black silicon sealant to seal any additional gaps in the grommet.



STEP 7:
Preparing End Grommet (Stub-in/Drops)

- 7.1 For stub-in and drop cables, it is not necessary to remove the end grommet from the closure. Refer to Table 1, to determine which concentric cone needs to be cut on the end grommet.
- 7.2 Remove the outer cable retention clamps at desired port location.
- 7.3 With the end grommet installed in the closure, cut through the appropriate concentric cone on the end grommet, using shears.
- 7.4 Drop grommets can be removed or left in place. When installing round drops, a Phillips-head screwdriver can be used to open a hole in the end grommet for entry. When installing flat drops, a flat blade screwdriver may be used for grommet entry.



- 7.4 Push the cable through the end grommet entry hole, from the outside of the closure, inward.
- 7.5 Reinstall the other cable retention clamp(s) after installing the appropriate cable holder insert.
- 7.6 Cable preparation and bond shield connector installation can now be performed on feeder or drop cable.

TABLE 1 - RECOMMENDED CUT POINT PER CABLE DIAMETER

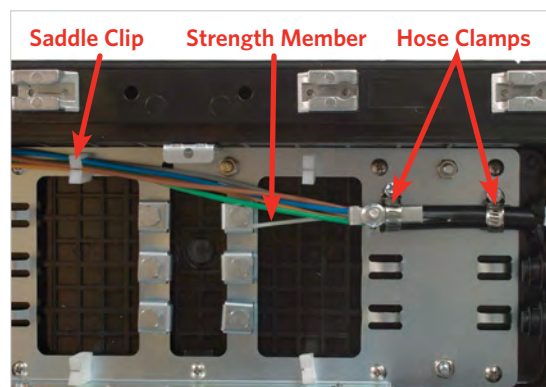
	Cutting Point	Cable Diameter in (mm)
Entry Gasket (standard) 8 mm to 21 mm cable	A	0.71 to 0.83 (18 to 21)
	B	0.51 to 0.71 (13 to 18)
	C	0.31 to 0.51 (8 to 13)
Entry Gasket (4 flat drop) 4.5 mm x 8 mm cable	A, B, C, D	0.18 x 0.31 (4.5 x 8)
	A, B, C, D	0.11 to 0.28 (3 to 7)

STEP 8:
Cable Attachment (Feeders)

- 8.1 Insert two (2) hose clamps (provided) through the dual slots of the metal back plate of closure and leave in an open position.
- 8.2 Lay the cable into the hose clamps and insert the strength member(s) under the 3-sided retainer clamp. Tightly fasten the hose clamps around the cable sheath using a Phillips-head screwdriver. Tightly fasten the strength member clamp bolt, using a 216C tool.

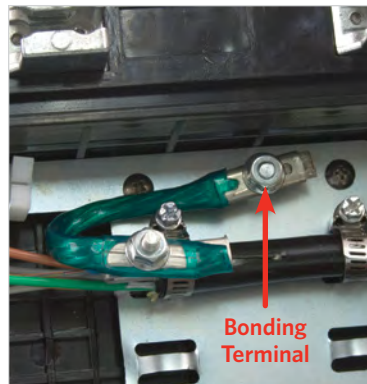
NOTE: If the strength member has an outer jacket, remove 1" of its jacket prior to inserting the strength member under the retainer clamp.

- 8.3 Ensure that the bond shield connector is not obstructed by the hose clamp and route the buffer tubes to the upper, far-side saddle clip.



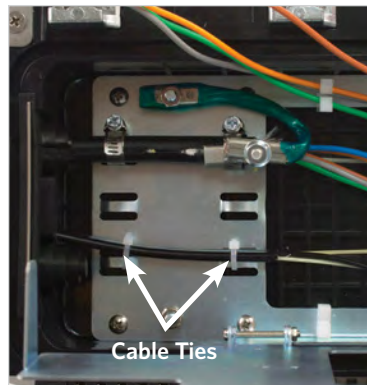
STEP 9:
Cable Bonding

- 9.1 Using a locally-approved #6 bonding strap (not provided), connect the bond shield connector terminal to one of four bonding terminals of the metal back plate of closure.
- 9.2 Tightly fasten both terminal nuts with a 216C tool.



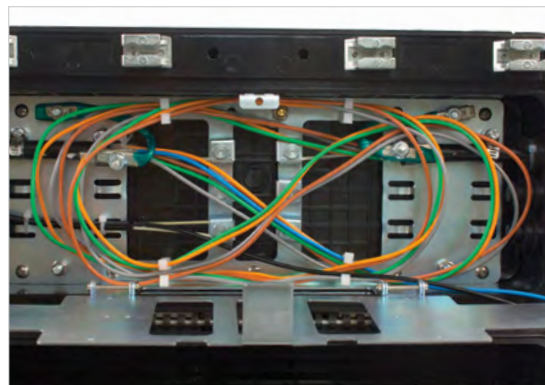
STEP 10:
Cable Attachment (Drops)

- 10.1 Insert two (2) cable ties (provided) through the dual slots of the metal back plate of closure and leave in an open position.
- 10.2 Lay the drop into the cable ties and insert the strength member(s) under the 3-sided retainer clamp. Tightly fasten the cable ties around the cable sheath using a needle-nosed pliers. Tightly fasten the strength member clamp bolt, using a 216C tool.



STEP 11:
Cable Routing and Storage

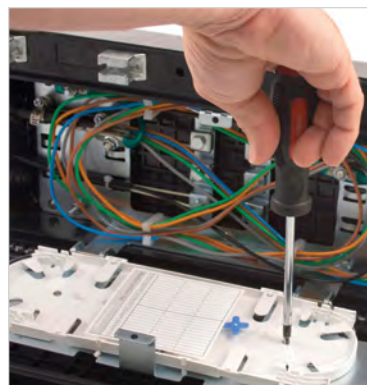
- 11.1 Separate the drop cable(s) and buffer tube(s) to be spliced from the express buffer tubes, as these cables/tubes are to be routed to the splice trays in subsequent steps.
- 11.2 Carefully bundle, wrap and store the express buffer tubes using the four, white saddle clips. A circular or "Figure 8" wrap can be used, with care that radius bend limits are not exceeded and the tubes are not bent or kinked.



STEP 12:
Installing Splice Trays

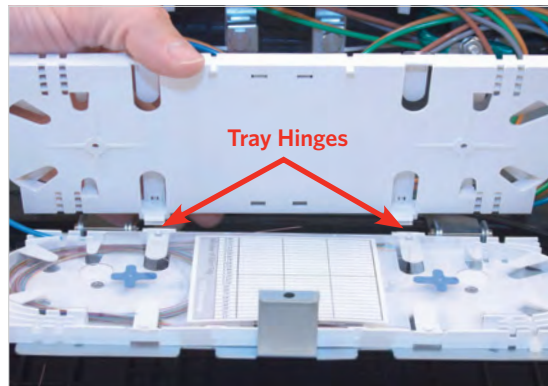
- 12.1 Using the two small, pre-installed Phillips-head screws of the hinged, metal splice tray assembly, fasten the splice tray (included) to the metal splice tray assembly.

NOTE: The splice tray must be installed with its molded tray hinges facing inwards of the closure.



- 12.2 The splice trays have been specially designed to hinge and nest together. If additional splice trays are required, a tray can easily be installed by engaging and interlocking the upper and lower tray hinges together.

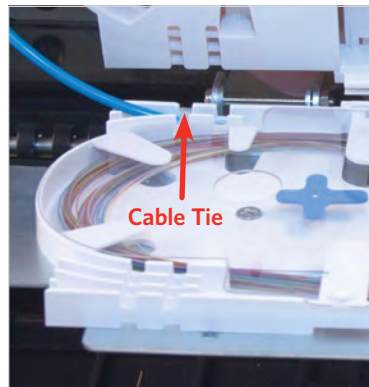
CAUTION: Once these trays are interlocked, the upper tray cannot be easily removed without causing damage to the tray hinges.



STEP 13:
Routing to the Splice Trays

- 13.1 The drop cable and buffer tubes can now be routed to the appropriate splice tray. Spiral transportation tubes are included with the closure to provide additional protection to Central Tube fiber, as they are routed to the trays.

NOTE: For buffer tubes less than 3 mm, transportation tubes are recommended for securing buffer tubes to the splice tray.



- 13.2 Allowing for sufficient tube slack for tray hinge movement, the tubes should be routed and secured to the tray using cable ties.

STEP 14:
Closing Splice Tray Compartment

- 14.1 Swing the tray assembly to a closed position, aligning the captive screw with its threaded hole in the upper body of the closure. Ensure there are no tubes kinked or pinched in the process.
- 14.2 Fasten the captive screw securely with a Phillips-head screwdriver.



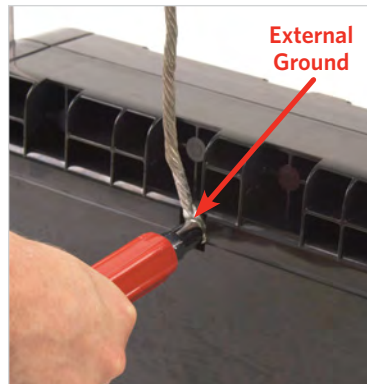
STEP 15:
Closing Splice Closure

- 15.1 Reinstall the main sealing gasket with the round side of gasket facing downward into closure body and the flat side of gasket facing upward.
- 15.2 For closing the Type B or C closure, move the upper and lower bodies of the closure together and squeeze firmly with one hand.
- 15.3 Insert the 1/4" hex Allen wrench into the square-headed nut. Turn the wrench clockwise one half turn, until the closure halves are tightly sealed/closed.



STEP 16:
**Grounding Splice
Closure**

- 16.1 Connect a locally-approved #6 ground braid cable (not provided) to the external ground terminal on the back of closure.
- 16.2 Tightly fasten ground terminal nut with a 216C tool.



Product Installation Complete