



1650 BSC Installation Guide

Buried Splice Closure

1) General Product Information

This practice provides information regarding the installation of the CNI BSC 1650 buried splice closure system. The BSC 1650 splice closure system provides a fast, simple way to seal and encapsulate telephone cable splices in non-pressurized, buried cable.

2) Warnings

- Extreme caution must be used when handling an open-flame torch. Follow the torch manufacturer's and/or your company's approved safety procedures.
- Adhere to the installation instructions carefully and use adequate ventilation. Avoid charring or burning when installing as the product produces fumes that may cause eye, skin, nose, and throat irritation, headache, dizziness, nausea, and, in the absence of ventilation may lead to asphyxiation.
- The alcohol cleaning tissue in this kit is **FLAMMABLE** and must be kept away from heat, sparks, and flame. It must be removed from the work area before igniting open-flame or hot-air source.

3) General Installation Notes

1. Temporary bonding procedures must be used where required.
2. Do not place the BSC 1650 closure on a wet splice. Thoroughly dry the splice in accordance with your company-approved practices. Be sure that no water comes in contact with the splice during installation.
3. Use only company-approved connectors and bonding hardware.
4. Follow the encapsulant manufacturer's instructions for mixing and using the encapsulant.
5. Remove rocks and sharp objects from the backfill when burying the splice. The BSC 1650 closure needs no permanent support attached.

4) Kit Components

The BSC 1650 closure kit contains the following components:

- Bond Bar
- Heat Shrink Wrap-Around Sleeve
- Inner Liner
- Heat Shield Liner
- Sealant Strips (2)
- Cleaning Tissue
- Tie Wraps



- Branch Clip
- Channel Joining Clip
- Metal Channels (2)

5) Size Selection Chart

Use this chart to select the appropriate size BSC 1650 buried splice closure kit:

1650 Heat Shrink Closure - Size Selection Chart						
CNI ORDERING NUMBER	CLOSURE SIZE	SPLICE OPENING (INCHES)	MIN. CABLE DIAMETER* (INCHES)	MAX. CABLE DIAMETER* (INCHES)	APPROX. CABLE RANGE (PAIRS)	APPROX. AMT. OF ENCAPSULANT REQUIRED
	A2	21.0	0.48	2.20	25-200	1,500 grams
	B2	21.0	1.10	3.75	200-400	3,000 grams

* Cable range and encapsulant required will vary upon cable type, gauge, connector type, and splice configuration

6) Splice Preparation

1. Clean the cable sheath with a clean cloth and company approved cleaning solution.
2. Use the inner-most holes on the supplied bond bar as a guide to mark the sheath, then make the appropriate sheath opening. Leave 1/2" of Mylar core wrap beyond each sheath opening. (Figure 1)



Figure 1

3. For dual-jacketed cable, leave 1" of the inner cable jacket and the Mylar core-wrap extending beyond the outer cable jacket.
4. Install an approved cable bond clamp (not supplied in the kit) and the supplied bond bar in the sheath opening.
5. Bond the branch cables to the main cable using an approved bond strap (not supplied in the kit). Cut off the excess bond stud and file away any remaining sharp edges.
6. Remove the Mylar binder markers, replacing them with loosely installed tie wrap binder markers.



7. Complete the splice work using approved connectors. Support the spliced groups with one or two loosely applied tie wraps. Position tie wrap heads away from the top of the bond bar.
8. To select the appropriate size BSC 1650 splice closure, measure the diameter of the splice at its largest point.

7) General Installation

1. Place 1 ¼ laps of sealant around each cable. butting the sealant against the end of the bonding hardware. (Figure 2)



Figure 2

2. For branch ends, cut and fold two 2" strips of sealant. Press the branch cable sealant collar against the main cable sealant collar, then place one folded strip on each side of the branch area as shown. Compress the sealant to eliminate voids.

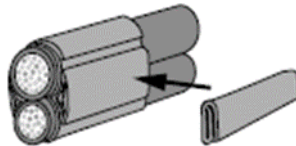


Figure 3

Note: Use large tie wrap to secure branch cable(s) to main cable 6" outboard of gel end seal

3. If an external ground wire is required, strip 12" of insulation from the ground wire (not supplied in the kit) and attach the ground wire eyelet to the bonding hardware. Press the ground wire into the sealant collar and cover the wire with a second lap of sealant. The diameter of the sealant collar should not exceed the Maximum Splice Diameter as shown in the Size Selection Chart. Cut a 2" strip of gel end seal and place over the top of the ground wire where it crosses the gel collar. Use vinyl tape to hold in place.
4. Center the inner liner around the splice bundle and overlap the ends of the mesh at least ½". Secure the mesh with the supplied tie wraps. (Figure 4)

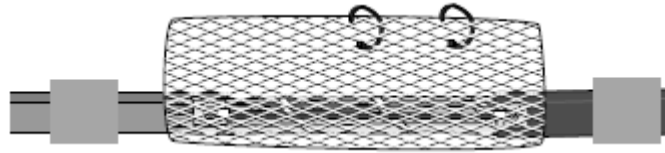


Figure 4

5. Leaving at least 1/2" of sealant collar exposed. pull the wrapper tight against the collar. Twist the edges of the wrapper several times and press the wrapper into the sealant collar.
6. Leaving 1/2" of sealant collar exposed. secure the wrapper with two laps of tightly wrapped vinyl tape. Repeat Steps 5 and 6 for the other end of the splice opening. (Figure 5)

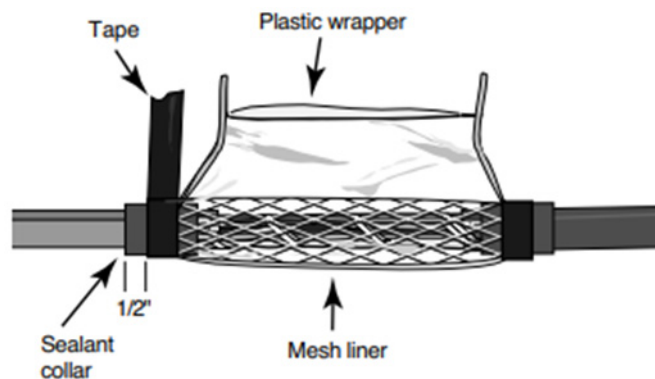


Figure 5

7. The approximate amount of encapsulant required for each size of the closure is indicated in the Size Selection Chart. Mix the encapsulant according to the manufacturer's directions. Fill the splice to the top of the mesh liner.

Note: For larger splices it may be necessary to pull the wrapper up against the splice to determine the proper encapsulant level.

8. Massage the splice bundle for about one minute, allowing the encapsulant to penetrate to the core of the splice.
9. Pull out the top corners of the wrapper and roll the wrapper down onto the top of the encapsulated splice bundle. Twist one end of the wrapper tightly against the sealant collar and secure it in place with vinyl tape, leaving 1/2" of the sealant collar exposed. Fold the excess wrapper back over the tape and secure it in place with an additional wrap of vinyl tape. (Figure 6)

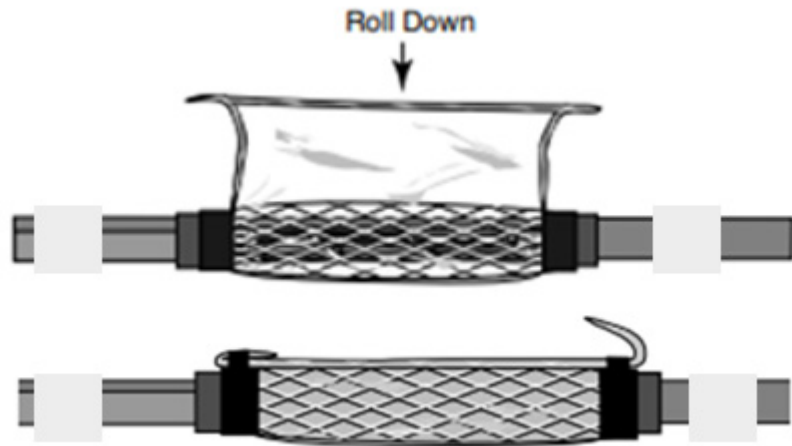


Figure 6

10. Force air out of the encapsulated bundle through the free end of the wrapper. Twist and tape the remaining end of the wrapper as in Step 12.
11. Starting at one sealant collar, loosely wrap the encapsulated bundle with one half-lapped layer of 3-mil splice wrap. At the opposite sealant collar, twist 6" of the splice wrap to form a cord, and tightly wrap the cord around the sealant collar. (Figure 7)

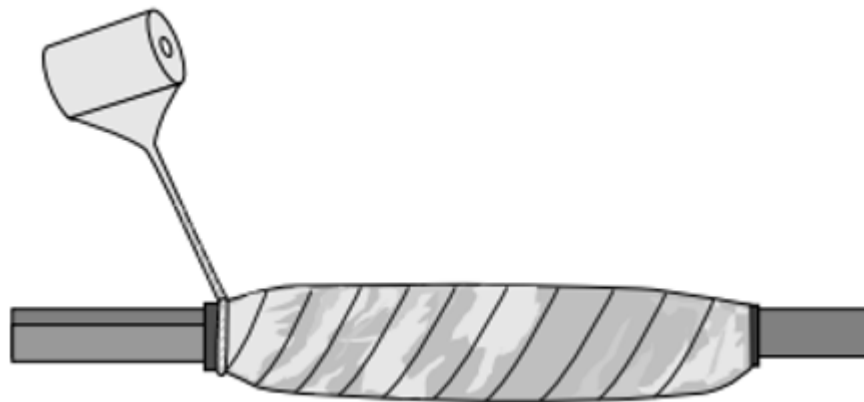


Figure 7

Note: Be sure to start and end the cord wrap on the sealant collar.

12. Working toward the other end of the splice bundle, repeat Step 11, creating a second loosely wrapped layer of splice wrap around the bundle.
13. To remove trapped air, puncture the splice wrap and work the air out of the bundle through the puncture. Seal the hole with several layers of splice wrap.
14. Tightly wrap five layers of 3-mil splice wrap around the encapsulated bundle. If the splice wrap breaks, resume wrapping below the break.



15. If a leak occurs in the splice, wrap over the leak with more splice wrap. If a leak occurs at the sealant collar, create a cord of splice wrap and apply it at the sealant collar as directed in Step 11.
16. Next step is the installation of Heat Shield (Variable Liner). Before installing roll tightly to take the shape of the splice bundle. (Figure 8)

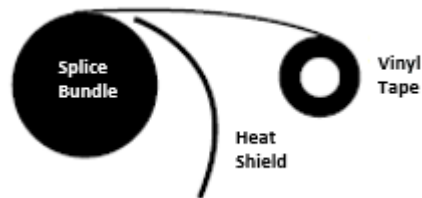


Figure 8

17. Center heat shield over the splice and hold in place with 3 single wraps of tape (1 at each end and 1 in the center). To hold the liner fingers tightly in place, wrap vinyl tape from the splice bundle towards the cable, at both ends. Do not extend the tape more than ¼" onto the cable. (Figure 9)



Figure 9

Note: for a closure with two variable liners, install the first liner at one sealant collar and tape its fingers in place. Install the second liner at the other sealant collar, and wrap the overlapping fingers in the center of the splice with vinyl tape. Apply a strip of vinyl tape along the seams of the two liners.

18. Using the alcohol wipe, clean 10" of cable sheath on each side of the splice.
19. Using the sandpaper strip supplied, completely scuff the cable sheath all around for a minimum of 6" on each side of the splice.
20. Remove the plastic backing from the heat shrink, then center it over the splice, slide on the metal channels from each end of the splice and secure with the channel joining clip. (Figure 10)

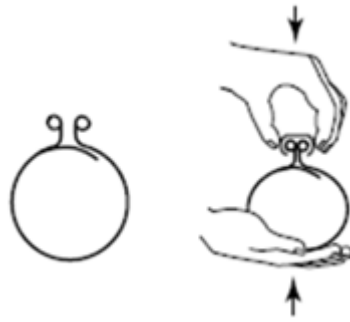


Figure 10

Note: if the metal channels fit very tightly or the joining clip will not slide over the metal channels, make sure that the heat shrink flap is not pinched between the metal channels. Then push the heat shrink up from the bottom and down on the top while sliding the channels toward the middle of the heat shrink.

21. Once the heat shrink is centered, mark the cable at both ends. After marking the cable, slide the heat shrink to one side.
22. Wrap 1 lap of aluminum tape around the cable overlapping the mark by 1" toward the splice. (If using a C or D kit, overlap 2") Using a blunt object, smooth the edges of the aluminum tape against the cable. (Figure 11)

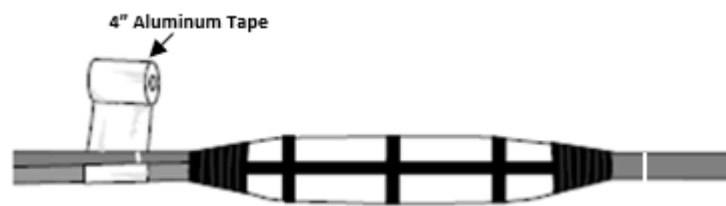


Figure 11

23. Using the open flame of your torch, preheat the cables on both sides of the splice to help the heat shrink adhere to the cables.

Note: Follow the torch manufacturer's and/or your company's approved safety procedures while adhering to the installation instructions carefully and use adequate ventilation. Avoid charring or burning when installing as the product produces fumes that may cause eye, skin, nose, and throat irritation, headache, dizziness, nausea and, in the absence of ventilation may lead to asphyxiation.

24. When an external ground wire is required, place a piece of adhesive strip under the ground wire.



25. Center the heat shrink over the splice, covering equal amounts of aluminum tape on each side.

Note: Ensure cable jacket has preheated as indicated in Step 23.

26. If there are 2 cables entering from one side, install the branch clip over the sleeve between the 2 cables. Ensure the 2 cables are parallel and secure with aluminum tape or a tie wrap. (Figure 12)

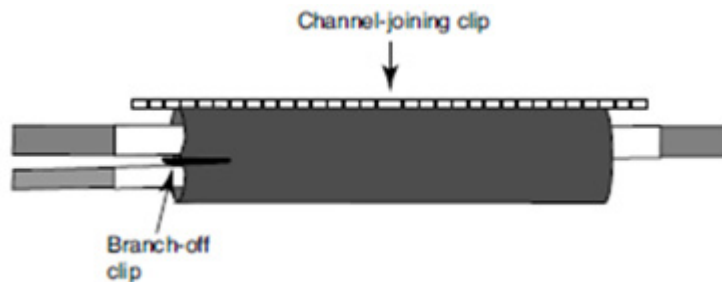


Figure 12

27. Ensuring the open flame is correctly adjusted, preheat both sides of the heat shrink until they begin to shrink. Continue the heating of the heat shrink in a fluent motion from side to side along the metal channels while ensuring the heat shrink sleeve continues to shrink evenly. (Figure 13)

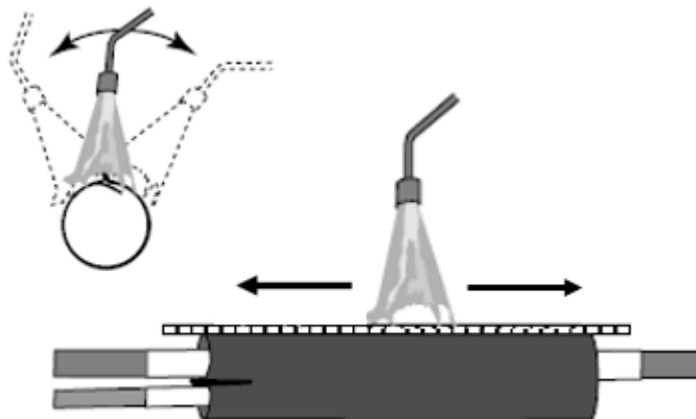


Figure 13

28. Start shrinking at the center of the sleeve, completely shrinking the sleeve as you work toward the ends.
29. Continue heating the sleeve until it is completed, and the heat-sensitive green dots have converted to black.
30. While the sleeve is still hot, lightly press the channel into the sleeve with a blunt object at each end of the closure.



31. The closure is correctly installed when:
 - a. it is completely shrunk, and
 - b. all heat-sensitive paint is converted to black, and
 - c. a continuous white line appears under the entire length of the channel, and
 - d. adhesive flow appears at both ends of the closure and around the branch-off clip.
32. Do not move the splice until the sleeve is cool to the touch.
33. Remove rocks and sharp objects from the backfill when burying the splice.
The BSC 1650 closure needs no permanent support attached.