REDDI™ Seal Closure for Filled Cable

Be sure to read and completely understand this procedure before applying product. Be sure to select the proper PREFORMED™ product before application.

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NOMENCLATURE

1. Standard Two-Section End Plates (2)
2. Shell
3. End Plate Insert (Grounding)
4. Torque Bars
5. Funnel
6. Application Procedure
7. Cue Card
8. Closing Clamps
9. End Plate LOCK-TAPE Sealant Strips
10. Cable LOCK-TAPE Sealant Roll
11. Moisture Barrier Sealant
12. End Seals
13. Threaded Plastic Plugs
14. Emery Cloth (for scuffing sheath)
15. Pair Protectors
16. Suspension Plates
17. Cable Bonding Braid
18. SURE-GRIP™ Shield Connectors
19. CABLE Mea-SURE™ Tape
20. Spacer Mat
21. Flange Seal
22. Gloves

TOOLS REQUIRED:

- Snips
- Tabbing Shears
- Common Screwdriver
- 3/8" nut driver
- 1/2" and 7/16" deep well sockets
- Torque wrench**
- Power End Plate Cutter**

**Available from PLP®

PREFORMED™ Plastic re-enterable closure kit contains everything needed for the installation except the tools, C-Cement, and vinyl tape.
DESCRIPTION

The REDDI Seal Cable Closure must be filled with resin and will not hold air pressure. It is available for use in underground, buried, and aerial plant. It is not affected by ultraviolet rays.

CAUTION: REDDI Seal End Plates are not interchangeable with the pressurized PREFORMED Splice Case.

Selecting the Proper Model

Step #1 Use the following charts to select the proper size case for splice bundle diameter, cable opening, and End Plate cable capacity.

CABLE OPENING CHART (cm)

<table>
<thead>
<tr>
<th>REDDI Seal/Closure Diameters (mm)</th>
<th>*Maximum Cable Opening</th>
</tr>
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<tbody>
<tr>
<td>3.0 x 25.8&quot; (762 x 65.53)</td>
<td>16.5&quot; (41.91)</td>
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<tr>
<td>4.0 x 25.8&quot; (10.16 x 65.53)</td>
<td>16.5&quot; (41.91)</td>
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<tr>
<td>6.5 x 28.4&quot; (16.51 x 72.14)</td>
<td>19.0&quot; (48.26)</td>
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<tr>
<td>9.5 x 28.4&quot; (24.13 x 72.14)</td>
<td>18.0&quot; (45.72)</td>
</tr>
<tr>
<td>6.5 x 38.5&quot; (16.51 x 97.79)</td>
<td>29.0&quot; (73.66)</td>
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CASE DIMENSIONS (cm)

<table>
<thead>
<tr>
<th>REDDI Seal/Closure Diameters (mm)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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<tr>
<td>3.0 x 25.8&quot; (762 x 65.53)</td>
<td>25.8&quot; (65.53)</td>
<td>20.3&quot; (51.56)</td>
<td>3.6&quot; (9.14)</td>
<td>3.5&quot; (8.89)</td>
<td>3.0&quot; (7.62)</td>
<td>1.06&quot; (2.69)</td>
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<tr>
<td>4.0 x 25.8&quot; (10.16 x 65.53)</td>
<td>25.8&quot; (65.53)</td>
<td>20.3&quot; (51.56)</td>
<td>4.6&quot; (11.68)</td>
<td>4.4&quot; (11.18)</td>
<td>4.0&quot; (10.16)</td>
<td>2.2&quot; (5.59)</td>
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<tr>
<td>6.5 x 28.4&quot; (16.51 x 72.14)</td>
<td>28.4&quot; (72.14)</td>
<td>22.7&quot; (56.66)</td>
<td>7.1&quot; (18.03)</td>
<td>6.8&quot; (17.27)</td>
<td>6.5&quot; (16.51)</td>
<td>4.1&quot; (10.41)</td>
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<td>9.5 x 28.4&quot; (24.13 x 72.14)</td>
<td>28.4&quot; (72.14)</td>
<td>21.7&quot; (55.12)</td>
<td>10.1&quot; (25.65)</td>
<td>9.8&quot; (24.89)</td>
<td>9.5&quot; (24.13)</td>
<td>7.1&quot; (18.03)</td>
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<tr>
<td>6.5 x 38.5&quot; (16.51 x 97.79)</td>
<td>38.5&quot; (97.79)</td>
<td>32.8&quot; (83.31)</td>
<td>7.1&quot; (18.03)</td>
<td>6.8&quot; (17.27)</td>
<td>6.5&quot; (16.51)</td>
<td>4.1&quot; (10.41)</td>
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MAXIMUM End Plate CABLE CAPACITY* (cm)

<table>
<thead>
<tr>
<th>REDDI Seal/Closure Diameters (mm)</th>
<th>1 Cable</th>
<th>2 Cables</th>
<th>3 Cables</th>
<th>4 Cables</th>
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<tbody>
<tr>
<td>3.0 x 25.8&quot; (762 x 65.53)</td>
<td>1.06&quot; (2.69)</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>4.0 x 25.8&quot; (10.16 x 65.53)</td>
<td>2.2&quot; (5.59)</td>
<td>1.95&quot; (4.95)</td>
<td>1.70&quot; (4.32)</td>
<td>1.45&quot; (3.68)</td>
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<tr>
<td>6.5 x 28.4&quot; (16.51 x 72.14)</td>
<td>4.1&quot; (10.41)</td>
<td>3.85&quot; (9.78)</td>
<td>3.60&quot; (9.14)</td>
<td>3.35&quot; (8.51)</td>
</tr>
<tr>
<td>9.5 x 28.4&quot; (24.13 x 72.14)</td>
<td>7.1&quot; (18.03)</td>
<td>6.85&quot; (17.40)</td>
<td>6.60&quot; (16.76)</td>
<td>6.35&quot; (16.13)</td>
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<tr>
<td>6.5 x 38.5&quot; (16.51 x 97.79)</td>
<td>4.1&quot; (10.41)</td>
<td>3.85&quot; (9.78)</td>
<td>3.60&quot; (9.14)</td>
<td>3.35&quot; (8.51)</td>
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*Always allow 1/4" (0.64 cm) clearance between cable holes. This clearance is allowed for in the above chart. These dimensions indicate the maximum combined cable diameters that can be accommodated in one end of the entire splice closure.

REDDI SEAL RESIN CAPACITY (cm)

<table>
<thead>
<tr>
<th>REDDI Seal Diameters (mm)</th>
<th>Resin</th>
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<tbody>
<tr>
<td></td>
<td>Grams¹</td>
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<tr>
<td>3.0 x 25.8&quot; (762 x 65.53)</td>
<td>2,350</td>
</tr>
<tr>
<td>4.0 x 25.8&quot; (10.16 x 65.53)</td>
<td>4,200</td>
</tr>
<tr>
<td>6.5 x 28.4&quot; (16.51 x 72.14)</td>
<td>12,300</td>
</tr>
<tr>
<td>9.5 x 28.4&quot; (24.13 x 72.14)</td>
<td>25,000</td>
</tr>
<tr>
<td>6.5 x 38.5&quot; (16.51 x 97.79)</td>
<td>17,800</td>
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</table>
RACKING AND SECURING THE CABLE

The cables entering the Splice Case should have at least 6” of straight, and non-stressed entry into the End Plates.
All cable should be tied within 12” of the End Plate.

Step #2 Measuring the cable for the Power End Plate Cutter Blade selection and LOCK-TAPE™ Sealant Application.

Measure the cable. The cable measuring tape serves two purposes:
A. It designates the proper blade to use for cutting holes in the End Plate.
B. It designates either one or two half-lapped layers of 1-1/2” LOCK-TAPE™ Sealant to be wrapped around the cable.

PLP TIP: If the index line falls on the line between areas, proceed as if the index line had fallen immediately to the right of the indexed line.

PLP TIP: The cable will vary in diameter from place to place along its length, so be sure to measure each cable at the area where the End Plate will be placed.

PLP TIP: Be sure to use the PLP CUE CARD found in each splice closure when measuring cables. This field worksheet will assure correct cutter blade size, proper hole cutting locations, and the correct amount of LOCK-TAPE™ Sealant to be wrapped around the cable(s).

Step #3 Cutting the End Plate with the Power End Plate Cutter.

Choose the correct size blade from the Power End Plate Cutter Blade Kit according to the reading acquired from CABLE Mea-SURE Tape.
Slide the blade into the slot in the lower end of the vertical shaft and tighten the retaining screw.

PLP TIP: If the retaining screw is difficult to tighten, be sure it is not clogged with dust from previous cuttings.
Step #4  Insert the stop-posts in the tapped holes in the base of the cutter corresponding to the End Plate diameter and hand tighten firmly.

Back off the clamp screw until the End Plate can be placed in the cutter. The End Plate should lie on top of the flanges of the stop-posts and the clamp-jaw guides.

PLP TIP: Make sure the outer edges of the End Plate sections are mated. If not, loosen the clamp screw and adjust.

Step #5  Positioning the End Plate
Place the End Plate with the seam parallel to the guide rods and hand tighten the screws. NOTE: The holes must be cut along the seam of the End Plate halves and within the outer dimensional marks indicated by the arrows.

Step #5 Continued

NOTE: Always allow 1/4" (0.64) cm clearance between the cable holes for the Two-Section End Plates. This clearance is allowed for in the dimensional chart. These dimensions indicated the maximum combined cable diameters that can be accommodated in one end of the splice closure.

Step #6  Centering the Cutter Blade
Loosen the lock screw in the bearing block. Lower the shaft until the center point of the cutter blade is in the desired position for the center of the hole. Hand tighten the lock screw in the bearing block.

PLP TIP: The lock screw in the bearing block is backed up by a small nylon pellet. If undue pressure is necessary to hold the bearing block in place, this pellet may be missing. Do not force the lock screw. This can scar the guide rails and render the cutter unusable. Remove the screw and insert a small piece of cable sheath. This will serve the same purpose as the nylon pellet. Additional nylon pellets are available from PLP.
Step #7 Mount a 3/8" electric drill (Drill Part # 80851659) with a 1/2# deep well socket to the upper end of the cutter shaft.

**PLP TIP:** A special drill motor is available from PLP. No matter what type of electric drill you use, be sure to press down on the body of the drill so the pressure is not exerted sideways on the shaft. This will result in a much longer life of the bearing blocks. Drill though the End Plate slowly.

Cut through the black plastic of the End Plate until the foam is just visible in the ring. Use a screwdriver to pop out the plastic disc (not necessary for A, B, C, and D blades). Continue cutting through the foam and lower the black plastic until the stop collar on the shaft bottoms on the bearing block. Never bring the blade back up through the End Plate while it is turning.

Step #8 Remove the drill motor. If another hole of the same or different diameter is required in the End Plate, follow the appropriate steps to change the cutter blades or move the bearing block to a new position.

Step #9 Disassemble the End Plates by removing the two bolts. Use the emery cloth provided to remove the sharp edges on the plastic and foam in area of the opening.

**PLP TIP:** This simple operation will help prevent catching the sheath and pinching it when drawing the End Plates together. ONLY USE THE EMERY CLOTH PROVIDED FOR THIS PROCEDURE.

**Do not remove too much material.**

**CABLE PREPARATION GENERAL INFORMATION**

1. Refer to REDDI Seal Closure dimensional charts for maximum cable opening.
2. Apply 1-1/2" LOCK-TAPE™ Sealant to the cable(s) only if the End Plates are to be installed immediately. This will help prevent the LOCK-TAPE™ Sealant from getting dirty.
3. Do not attach the splicing tool on the cable sheath where End Plates will be placed.
4. Always try to place the End Plates on the cable sheath that is in good condition.
5. Since the cable is locked into place with the LOCK-TAPE™ Sealant, it makes no difference where the Shield Bond Connectors are placed, but the tab slit for the connector must not extend under the End Plate.
6. If the Jelly Filled Cable is opened, (prior to installing the End Plated) mask the cable with vinyl tape to protect the cable sheath. This simple procedure prevents any cable compounds from affecting the adhesion of LOCK-TAPE™ Sealant to the cable sheath. Make certain that the vinyl tape is removed prior to paplication of LOCK-TAPE™ Sealant.
7. If splicing methods permit, it is preferable to apply the End Plates prior to the bonding and splicing operation. This will assure a good clean seal.
Step #10  Select the End Plate halves with the threaded bolt holes in the metal reinforcing collar. Bolt these halves to a torque bar. The offset in the torque bar should face the splice bundle.

Use this assembly to mark the area to be cleaned, scuffed, and the cable opening.

Remove all the grease, cable lubricant, mud, etc., from the cable. Thoroughly scuff the cable for 6" (15.24 cm) to 8" (20.32 cm) in the area marked.

**PLP TIP:** Use the emery cloth provided with the case. Always scuff around the cable, never lengthwise along it. Be sure all deep grooves are removed.

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Step #11  Application of 1-1/2" LOCK-TAPE™ Sealant to the Cable.

Coat the scuffed area of the cable with C-Cement and allow it to dry to a tacky base. Use the procedure described in the PLP TIP: Step 12 to help the C-Cement dry fast. Half lap the 1-1/2" LOCK-TAPE™ Sealant around cable (black side up) in the area of the cable coated with C-Cement. Stretch tape while applying. Use one or two half lapped layers as determined by the measurement.

**PLP TIP:** Stretch the tape enough to reduce its width to 1-1/8". Be sure to remove the backing from the white side while applying the tape. The white side is the sticky side, and should be applied toward the cable. Below is shown the completed application of one half-lap of LOCK-TAPE™ Sealant.

Be sure to keep the LOCK-TAPE™ Sealant wrap dry, and free from grease and dirt.
Step #12 Applying the End Plate to the Cable. Apply a thin coat of C-Cement to each inside surface of the End Plates as shown below.

PLP TIP: Use removed backing from LOCK-TAPE™ Sealant to dry C-Cement to the End Plate.

Step #13 When C-Cement becomes tacky, remove the protective backing and apply the LOCK-TAPE™ Sealant, white side down, and without stretching tape to each End Plate half, following the contour of the cable holes. Square cut the tape away from the bolt hole area just beyond the metal insert.

Step #14 Before applying the prepared End Plate halves to the cable, apply the C-Cement 1/2" (1.27 cm) wide adjacent to the hole and 1/2" wide into the hole for the total width of the End Plate.

Step #15 Complete LOCK-TAPE™ Sealant application to the End Plate halves

Step #16 Before applying End Plates, oval cable slightly to prevent pinching sheath and apply End Plates over oval as shown.

NOTE: Lead cable must be rounded, layered with LOCK TAPE Sealant, and then proceed with installation.
Step #17 Position the End Plate torque bar assembly on the cable at the proper point and apply mating End Plate halves. Bring the End Plates together evenly, tightening each bolt in rotation 2 or 3 turns at a time. **DO NOT USE AIR WRENCHES FOR THIS OPERATION.**

Using a ratchet wrench, draw the End Plate halves completely together until the excess LOCK-TAPE™ Sealant separates and lays back as illustrated.

Step #18 When the End Plates are completely together, trim the excess LOCK-TAPE™ sealant with snips to approximately 1/4" (.62 cm) of the end plate. Do not pull the tape when trimming.

Step #19 Apply two wraps of vinyl tape over exposed LOCK-TAPE™ sealant on the cables.

Step #20 After splice is completed, place a ring of the moisture barrier sealant around the cable, in between the shield connector and end plate, cover Moisture Barrier sealant with LOCK-TAPE™ sealant (supplied in kit) white side out.
**Step #21**  
Wrap the complete splice bundle with the open cell spacer mat supplied. This will prevent any part of the splice bundle from contacting the wall closure.

**PLP TIP:** Front torque bar may be removed for ease of application of spacer mat. Do not wrap too tightly. A tight wrap will constrict the flow of resin into the core of the splice.

**Step #22**  
After the splice is wrapped, reinstall the torque bar.

**PLP TIP:** After the torque bars have been reapplied, be sure the bolts are fully drawn down so as not to interfere with shell placement.

**Step #23**  
If the cable shield is to be externally grounded, continue the bonding braid through the shield connector and insert the end of the braid through the shield connector and insert the end of braid to the bonding clip. Bolt the clip and the braid to the bonding insert.

**Step #24**  
Bolt the bonding ribbon and clip to the outside face of the End Plate in a similar manner.

**BONDING**
END SEAL - FLANGE SEAL APPLICATION

Step #25  Apply one 1 1/2" (3.81cm) LOCK-TAPE™ Sealant wrap over the End Plates, around the outside three rings. Stretch the LOCK-TAPE™ sealant strip as you apply it around the End Plates.

Step #26  Remove the backing and apply the neoprene end seals around the End Plates over the LOCK-TAPE™ Sealant wrap. Overlap the ends of the end seal. Make sure the overlap is where the flange opening will be located.

Step #27  Apply the flange seal by pressing (kneading) it under the flange lip. Do not stretch the seal. Leave approximately 1/4" extending beyond each end of the flange. Trim off any excess neoprene seal.

PLP TIP:  When overlapping the end seal, press the overlap down onto the bevel so that the upper portion of the seal fills any void at the overlap junction.

INSTALLING THE SHELL

Step #28  Apply the shell over the End Plates by spreading the opening until the shell fits over the end plate.

Step #29  Position the shell so that the filling holes are on top, but make sure the flange is facing you.
Step #30  Squeeze the flanges together and fully apply the closing clamps.

Step #31  Completed closure ready to fill with resin. Closure without resin shown below.

Step #32  When using the port holes to fill the case, slightly elevate on end (approximately one inch, 2.54 cm). Place the filling funnel into the LOWER hole. Mix the encapsulant per instructions on the container. Pour the encapsulant slowly into the funnel until the encapsulant can be seen in the higher port hole.

Step #33  Level the Splice Case and continue to pour until the encapsulant pours out of both port holes. Install both plugs.

Step #34  Remove the plastic closing clamps. Start to open the top seam using a screwdriver.

When possible, grab each side of the flange and apply force to spread the case apart until the shell can be removed. (Resin has been omitted for clarity)

Step #35  To facilitate re-entry, the encapsulant may be scored lengthwise and perpendicular to the cable to form large squares, then use your fingers. Be careful not to damage any pairs during this operations.

PLP TIP: Some encapsulates stick to the shell more than others. Apply pressure. Allow the shell to come apart slowly. Remove the shell completely.

Step #36  If additional cables are to be added, a new end plate(s) must be used. Install according to this practice. Remove all old sealing tape and LOCK-TAPE™ Sealant from the cable and shell.
SAFETY CONSIDERATIONS

This application procedure is not intended to supersede any company construction or safety standards. This procedure is offered only to illustrate safe application for the individual.

FAILURE TO FOLLOW THESE PROCEDURES MAY RESULT IN PERSONAL INJURY OR DEATH.

This product may be removed and re-installed during the initial installation if it is in good condition. After extended service life, it is recommended the product not be reused once removed from service.

Do not modify this product under any circumstances.

This product is intended for use by trained technicians only. This product should not be used by anyone who is not familiar with, and not trained to use it.

When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact. Be sure to wear proper safety equipment per your company protocol.

For proper performance and personal safety, be sure to select the proper size PREFORMED™ product before application.

PREFORMED products are precision devices. To ensure proper performance, they should be stored in cartons under cover and handled carefully.