

## BURIED SPLICES CORROSION PROTECTION

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. CORROSION PROTECTION—TAPECOAT 20 . . . . .	1
3. CORROSION PROTECTION—B PRIMER AND E VINYL TAPE . . . . .	6
4. MECHANICAL PROTECTION . . . . .	7
5. SUPPORTING SPLICE . . . . .	7
1. GENERAL	
1.01 This section outlines the method of applying corrosion protection to galvanized cast-iron splice cases and lead-sleeve closures on buried cable splices.	
1.02 This section is reissued to replace pitch tape with Tapecoat 20.	
1.03 <i>Corrosion Protection:</i> The two types available are Tapecoat 20 and E Vinyl Tape. Tapecoat 20 can be used on either splice case or lead-sleeve closures. <i>E Vinyl Tape is used on lead-sleeve closures only.</i>	
1.04 <i>Mechanical Protection:</i> Mechanical protection is not usually required when a splice case is used as a closure. Wire- or tape-armored cable, with a lead-sleeve closure, requires mechanical protection in the form of brass wire cloth or galvanized casing; Tapecoat 20 can be used with either type. E Vinyl Tape should be used only on armored cables that are protected with brass wire cloth or on cables where no mechanical protection is necessary, such as polyethylene-sheathed or jute-protected lead-sheathed cable.	
1.05 Before applying any protection, clean and dry the surface of the splice case or lead sleeve and adjacent sheath to be covered.	

### 2. CORROSION PROTECTION—TAPECOAT 20

#### PRECAUTIONS

2.01 Since the application of Tapecoat 20 requires the use of an acetylene torch, follow the precautions and instructions as found in Section 081-330-105.

2.02 In applying Tapecoat 20, protection should be worn to protect the hands and eyes from small particles of pitch that may fly off the tape as the surface is heated. The use of a small flame will keep this action to a minimum. Do not overheat because this will expose the fabric and *the pitch may catch fire.*

2.03 In cold weather, the tape should be kept in a heated compartment, if possible. When the tape is chilled, the pitch may crack as the roll is unwound and some of the pitch may chip off. This condition does not materially affect the subsequent use of the tape.

#### HANDLING TAPECOAT 20

2.04 *Keep the material out of the sun* before application in warm weather; otherwise, it may soften unduly and be difficult to handle.

2.05 *Keep the material dry at all times.*

2.06 When unrolling the tape, start from the edge and pull across the roll until a full width of tape is free; then pull the full width of the tape.

2.07 The surface of the Tapecoat 20 that will contact the splice case or lead sleeve should be softened with a light application of heat from a torch utilizing a Prestolite No. 9 Torch Stem or equivalent. Heat only about a 6-inch strip of the material at one time. The Tapecoat 20 should be applied immediately as it is heated. This application of heat softens the tape so that it becomes limp and easily shaped, and causes the pitch to become

tacky and make it adhere to the splice case, lead sleeve, cable sheath, and to itself.

**Note:** If the splice case or lead sleeve is very cold, it should be preheated with the torch to ensure good contact.

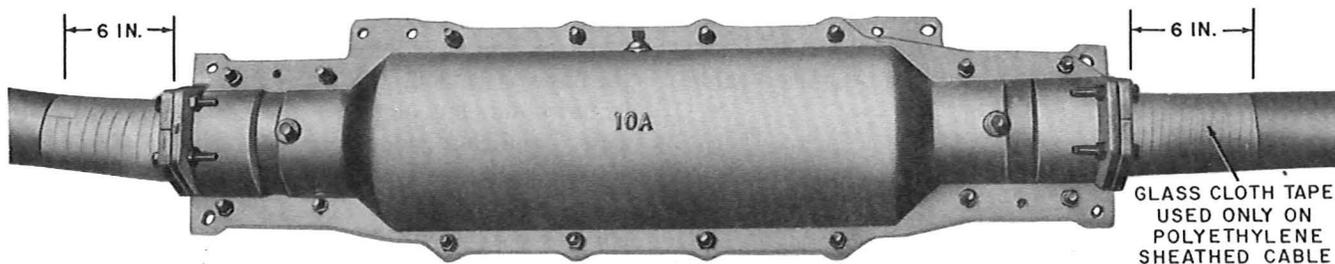
**2.08** The tape will be soft enough to apply as soon as the pitch on the heated surface becomes bright and shiny. **Do not overheat** as this will cause the pitch to run and drip.

**2.09** The Tapecoat must be worked down on all the irregular surfaces. Do not span across areas leaving large voids under the coating.

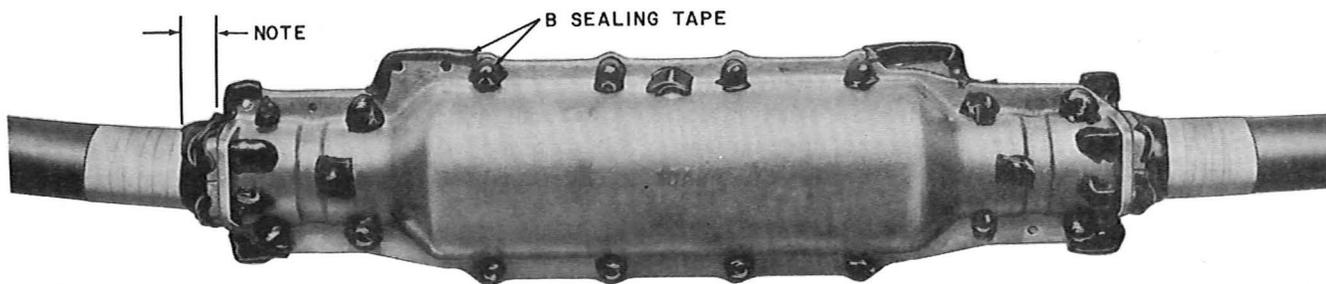
**STRAIGHT SPlice CASE CLOSURE**

**2.10** The following method of applying Tapecoat 20 to splice cases is applicable to polyethylene-sheathed cables:

- (1) Apply half-lapped layers of glass cloth tape to the polyethylene cable at each end of the splice case to extend 6 inches beyond the case (Fig. 1).
- (2) Cover nuts, bolts, and projections of the splice case with small pieces of B Sealing Tape pressed in place.
- (3) Build up a 1-inch collar of B Sealing Tape at each end of the splice case (Fig. 2).



**Fig. 1—Glass Cloth Tape Applied**



**NOTE:**  
APPLY 1-INCH OF B SEALING TAPE

**Fig. 2—B Sealing Tape Placed**

(4) Apply a 2-inch overlapped layer of Tapecoat 20 to one end of the case leaving the end unsealed. Allow approximately 5 inches of the tape to extend beyond the end of the case for proper sealing (Fig. 3 and 4). When sealing the overlap, burn off that portion of plastic film

exterior under the overlap with the torch to ensure a good seal.

(5) Cut a second piece of tape and apply with a minimum overlap of 2 inches, leaving the end unsealed (Fig. 5).

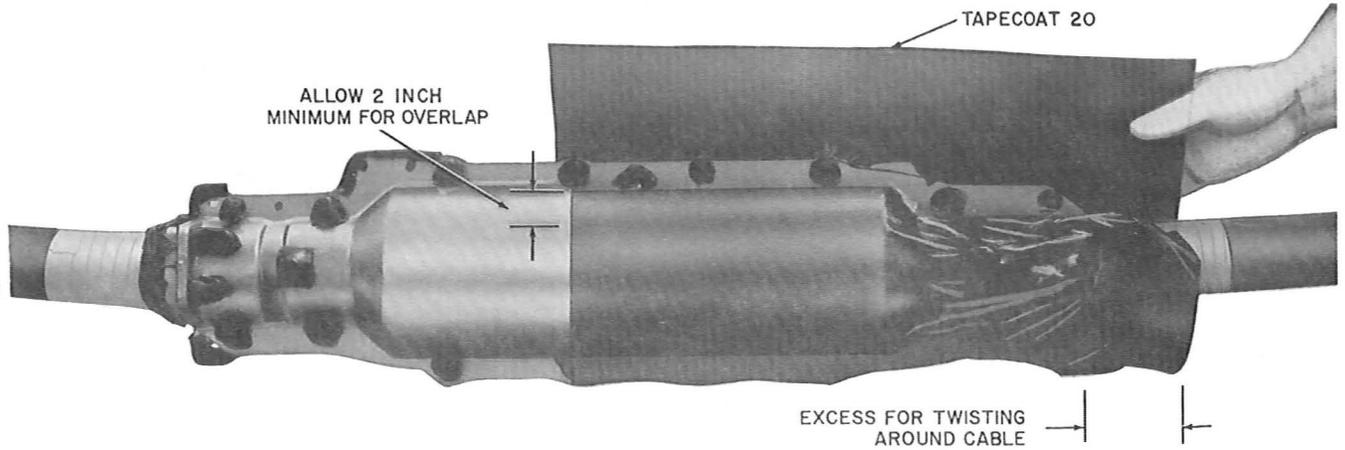


Fig. 3—Applying Tapecoat 20

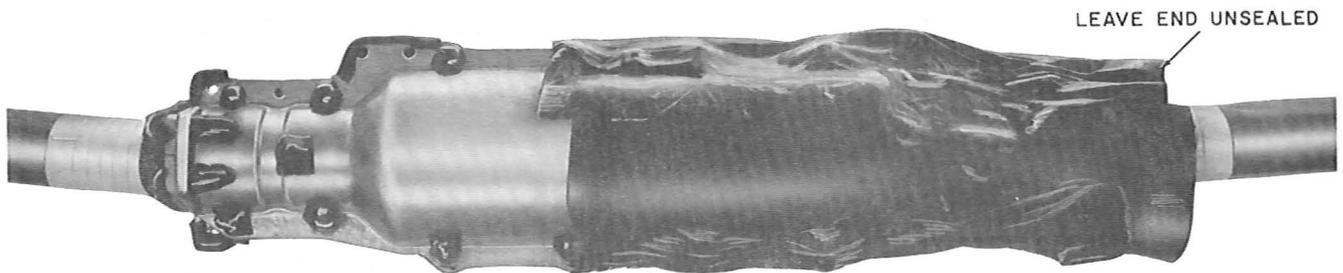


Fig. 4—One Width of Tapecoat 20 Applied

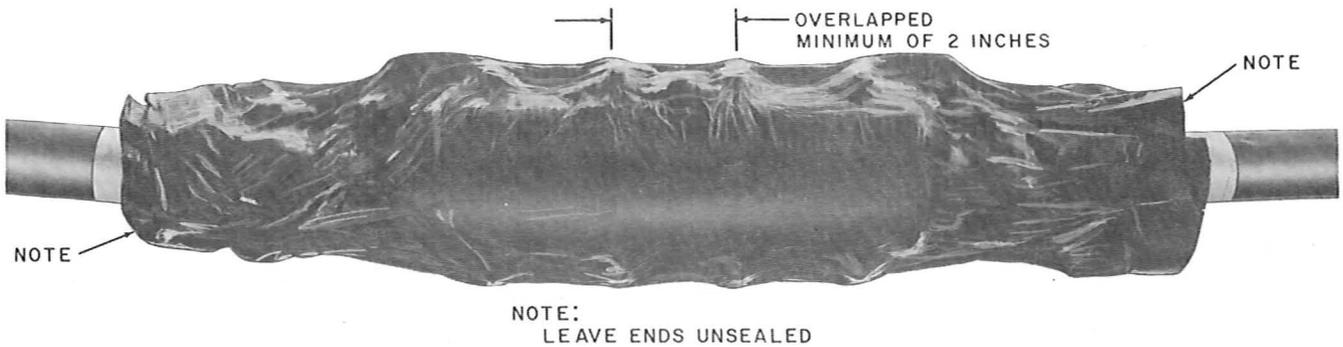


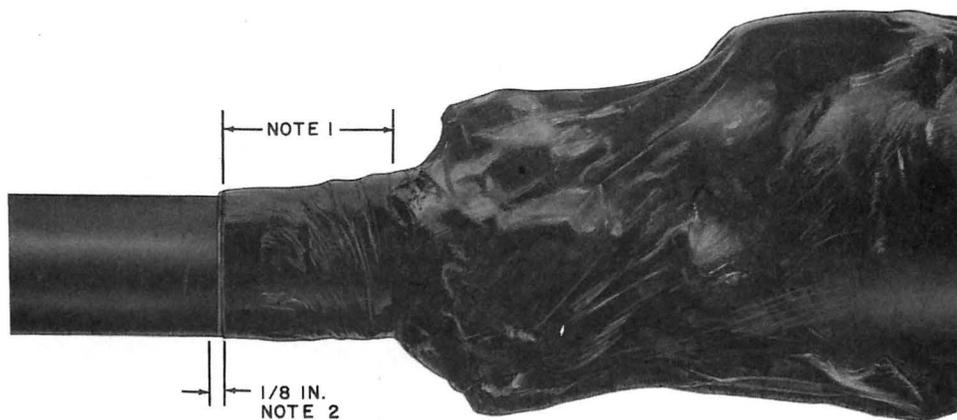
Fig. 5—Tapecoat 20 Applied with Ends Unsealed

(6) Cut two 6-inch wide strips of Tapecoat 20 for application of the end seals. Heat the underside of the openings at the ends and twist into place (Fig. 6). Heat and apply the 6-inch

strips in the same direction as the twist (Fig. 7). Do not allow the Tapecoat 20 to contact the cable sheath (Fig. 8).



Fig. 6—End Twisted



NOTE:  
1. CUT 6 INCH STRIP AND WRAP IN SAME DIRECTION OF TWISTED END  
2. LEAVE 1/8 INCH OF GLASS CLOTH TAPE EXPOSED

Fig. 7—End Twisted and Sealed with 6-Inch Strip

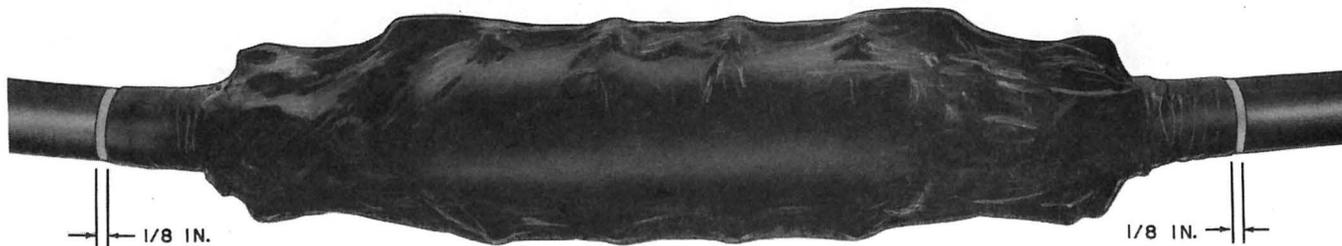


Fig. 8—Completed Wrapped Splice

(7) ♦The method of preparing and applying Tapecoat 20 to a splice case on lead-sheathed cable is similar to the method for polyethylene-sheathed cable, except the glass cloth tape must *not* be used because it is corrosive to lead.♦

♦LEAD SLEEVE CLOSURE♦

2.11 ♦Preparation and application of Tapecoat 20 to lead-sleeve closures is similar to that of galvanized cast-iron splice cases, except the use of B Sealing Tape is not necessary as there are no surface irregularities to cover.♦

MULTIPLE JOINTS

2.12 ♦Prepare and apply Tapecoat 20 to the closure as outlined in 2.10 (1) through (5). Cut the open ends of the tape between the cables.♦

2.13 ♦Heat and form the ends around the crotch area (Fig. 9) and cut a short length of tape, place between the cables, and seal around the closure. Cut two 6-inch wide strips of Tapecoat 20 and seal around each cable leaving 1/8 inch of the glass cloth tape exposed (Fig. 10). Do not allow Tapecoat 20 to contact the polyethylene cable sheath.♦

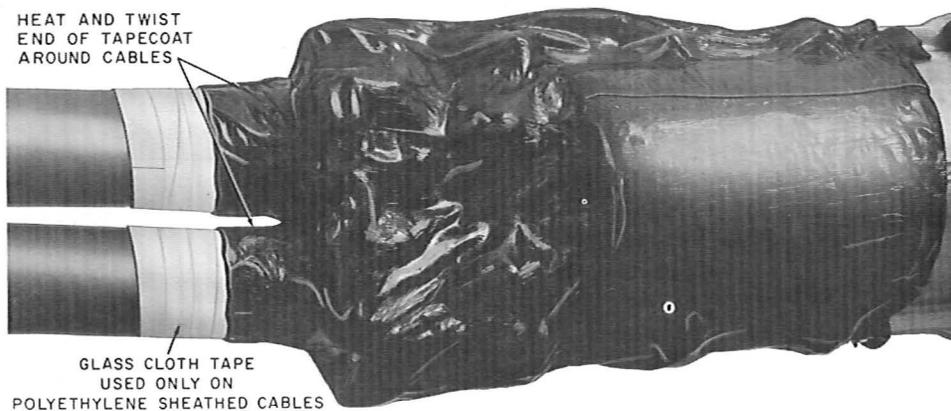


Fig. 9—Tapecoat 20 Applied to Multiple Joint

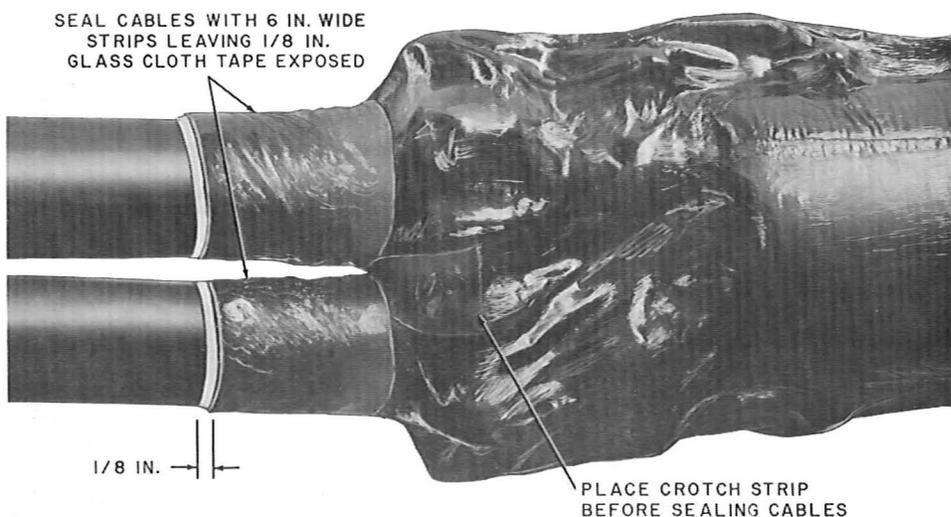


Fig. 10—Completed Multiple Joint

### 3. CORROSION PROTECTION—B PRIMER AND E VINYL TAPE

**3.01** The method outlined as follows may be used on cables having lead or polyethylene sheath, when a lead sleeve is used as a closure.

#### PRECAUTIONS

**3.02** Provide adequate ventilation to avoid prolonged inhalation of the primer vapor. In addition, since the primer in its liquid state is highly flammable, it should be handled observing fire precautions applicable to this type of material, that is, no smoking by the workman applying the primer, etc.

#### APPLYING PRIMER

**3.03** Apply the B Primer from the can with a 2- or 3-inch flat paintbrush. The primer should completely cover the sleeve and 3 inches of the cable sheath at each end. *When applying the primer to splices in cables having an outer layer of polyethylene, avoid getting the primer on the polyethylene. Terminate the application of the primer on the wrappings which cover the end of the polyethylene.*

**3.04** Because of the fast-drying characteristics of the primer, apply it rapidly. Discard the paintbrush after use.

**3.05** Let the primer dry until it sets (approximately 1/2 hour).

#### TAPING CABLE

##### *Straight Splice*

**3.06** On a straight splice, apply strips of E Vinyl Tape across the end plate, covering the surface completely. If the sleeve is *beat-in* on the sheath, the tape should be applied in a similar manner. If the difference in diameter between sheath and sleeve is more than 1-1/2 inches (A minus B), use two widths of tape (Fig. 11).

**3.07** Starting at the top of the end plate, make two complete turns of tape around the sleeve, binding down the strips that have been placed over the wiped joint. Then apply one half-lapped layer of tape across the sleeve, finishing with two full turns of tape. Do not stretch the tape during application (Fig. 12).

**3.08** Starting at the junction of the cable and the sleeve, make two turns of tape around the cable, covering the edges of the strips previously applied. Then cover the cable with one half-lapped layer of tape extending about 3 inches beyond the end of the corrosion protection and finish with two full turns of tape. Do not stretch the tape (Fig. 13).

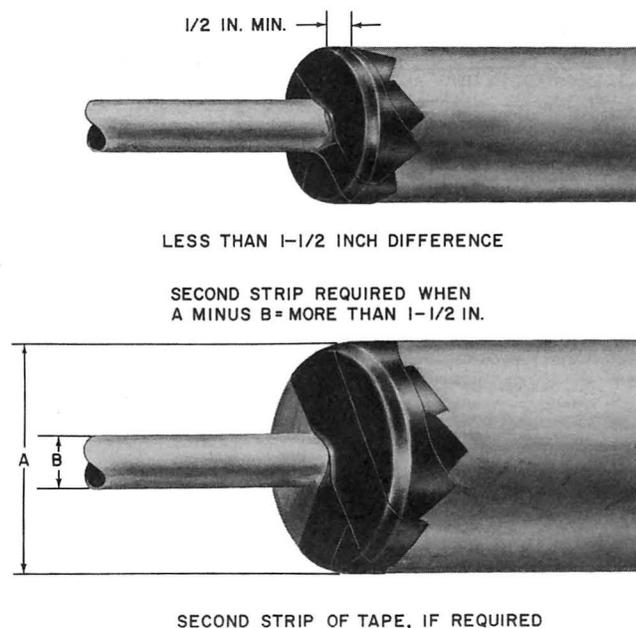


Fig. 11—Placement of Tape Over End Plate

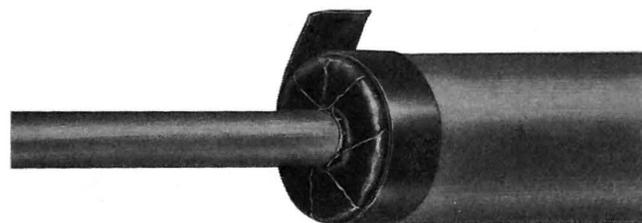


Fig. 12—Taping End Plate

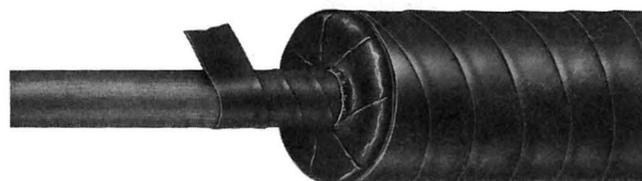


Fig. 13—Taping Cable and Sleeve Junction

### MULTIPLE JOINTS

3.09 On multiple joints, place a strip of tape in the crotch between the two cables. Then cover the end plate or beat-in as shown in Fig. 14.

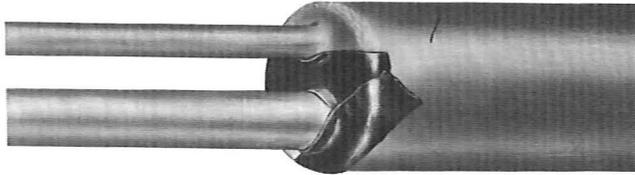


Fig. 14—Taping Multiple Joint

3.10 Wrap the sleeve and cable as covered under straight splices, 3.06 through 3.08.

### 4. MECHANICAL PROTECTION

4.01 Where the cable protection includes steel tape or wire armor, all lead-sleeve closures or other gaps in the continuity of the mechanical protection should be safeguarded by installing either brass wire cloth or a buried splice casing over the corrosion protection. Mechanical protection is generally not required when a splice case is used as a closure.

#### BRASS WIRE CLOTH

4.02 Brass wire cloth, which is preferable from the standpoint of longer effective life and ease of installation, may be used over vinyl tape as outlined as follows:

(a) Cut a piece of wire cloth about 6 inches longer than the length of the corrosion protection and about 2 inches wider than its circumference. Form the wire cloth around the sleeve using a tourniquet, if necessary, to make it fit snugly around the splice. The ends of the wire cloth will extend as a *tube* over the end of the splice. Form the *tube* ends around the cable by increasing the overlap of the edges until the wire cloth fits snugly around the splice ends and cable.

(b) At branch splices, the ends of the wire cloth should be formed into the crotch between cables to close any openings through which rodents might enter. Lash the wire cloth in place with construction wire or lashing wire.

### BURIED SPLICE CASING

4.03 If brass wire cloth is not available, install a buried splice casing. The casing should be made of 24-gauge galvanized sheet steel. The casing should be about 6 inches longer than the corrosion protection and about 2 inches wider than its circumference.

4.04 A prepared casing is shown in Fig. 15. The ends are slit as illustrated to facilitate forming the casing around the cable.

4.05 Install the casing by forming the sheet metal around the previously placed corrosion protection. Draw it down tightly by means of a tourniquet, forming the longitudinally cut ends of the casing closely around the cable. Lash the casing in place with wire as shown in Fig. 16. Apply Tapecoat 20 to the casing as outlined in Part 2.

### 5. SUPPORTING SPLICE

5.01 In order to prevent fracture of the sheath at the wiped joints where the soil conditions are such that the splice may settle, the splice should be lashed to a creosoted plank with wire or houseline. The plank should be about 3 feet longer than the lead sleeve. Shims should be placed under the cable adjacent to the wipes to prevent strain on the joints or sheaths.

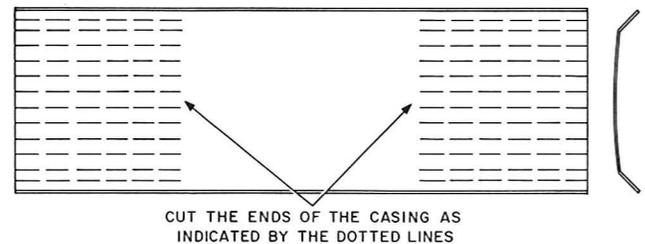


Fig. 15—Preparing a Buried Splice Casing



Fig. 16—Installation of Casing