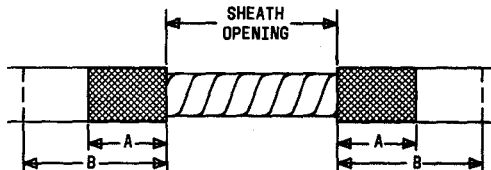


REMOVING CABLE SHEATH

GENERAL

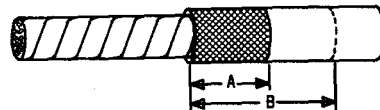
CONTENTS	PAGE
1. GENERAL	1
2. PRECAUTIONS	1
3. MARKING AND CLEANING SHEATH	2
4. REMOVING SHEATH	3
LEAD	3
STALPETH AND ALPETH	3
PAP AND PASP	4
LEPETH	9
POLYETHYLENE	9
BONDED ASP AND STALPETH	10
5. PROTECTIVE WRAPPING (LEAD SHEATH)	11

are to be followed when cleaning all lead surfaces (Fig. 1 and 2):



A: AREA TO BE CLEANED.
B: APPLY LEPEC TO LEAD SURFACE AT LEAST 2 INCHES BEYOND AREA TO BE CLEANED.

Fig. 1—Applying LEPEC—Continuous Cable Sheath Opening



A: AREA TO BE CLEANED.
B: APPLY LEPEC TO LEAD SURFACE AT LEAST 2 INCHES BEYOND AREA TO BE CLEANED.

Fig. 2—Applying LEPEC—Cable End

1. GENERAL

1.01 This section describes the methods of removing cable sheath from cable prior to splicing. This section also covers the methods of protecting the cable core at the ends of the sheath.

1.02 This section is reissued to include the new bonded sheath cable and to include information formerly contained in Sections 632-316-200, 632-316-210, 632-317-200, 632-317-205, and 632-318-200. Revision arrows are used to emphasize the more significant changes.

2. PRECAUTIONS

2.01 ♦Dry scraping, sanding, or otherwise abrading the surface of lead sheathing can generate airborne lead dust particles.♦ The following procedures

(1) Use a clean, dry rag to apply a generous amount of LEPEC to the lead surface to be cleaned and at least 2 inches beyond the area to be cleaned. **Do not use the carding brush on any lead surface that has not been coated with LEPEC.**

(2) Apply a 1/2-inch wide strip of LEPEC over the length of the bristles of the carding brush and brush the surface to be cleaned.

NOTICE

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(3) As the LEPEC begins to dry while brushing, apply additional compound to the carding brush and continue brushing. Remove lead particulate from the carding brush by striking the brush against a solid object. The lead particulate should be caught in a container and disposed of in accordance with local practices.

(4) When the lead surface has been thoroughly cleaned, remove excess LEPEC with a clean, dry rag. Since stearine is a component of the LEPEC, it is not necessary to apply additional stearine to the cleaned area to protect against oxidation. Dispose of rags in accordance with local practices.

2.02 Set up and secure the cable ends firmly in position before opening the sheath. This will prevent movement of the cable and sheath while splicing the conductors. Remove or turn back all sheath coverings (tape, jute, armor wires, etc) from the opening location.

2.03 Take protective measures to keep moisture away from the exposed conductors when opening a cable in a damp area. Place drip collars on the cables beyond the sheath opening to prevent water from running along the cable and into the splice.

2.04 When removing sheath from the end of a cable containing defective pair markers, exercise care so that the markers are not detached (Sections 632-020-105 and 632-020-200).

2.05 Remove sheath from cables containing disc-insulated spiral-four quads or coaxials by slitting the sheath with the chipping knife. **Do not pull the sheath off the ends of such cables**, because the quads or coaxials may be damaged.

2.06 Do not allow the chipping knife to cut the paper wrapping on the core or damage the conductors.

♦**2.07** Since the protection of the lead sheath against corrosion depends on having a complete covering, it is essential to avoid damaging the polyethylene in setting up the cable.

2.08 Gloves must be worn when working on cable.♦

3. MARKING AND CLEANING SHEATH

3.01 The procedure for measuring and marking for a sheath opening is as follows:

(1) Establish the center line of the opening.

(2) ♦Refer to practices covering wire joining lead sleeves, splice cases, and closures to determine the amount of cable ends required to make the splice and the length of the sheath opening. Mark the sheath opening with 1/2-inch B paper tape as shown in Fig. 3.♦

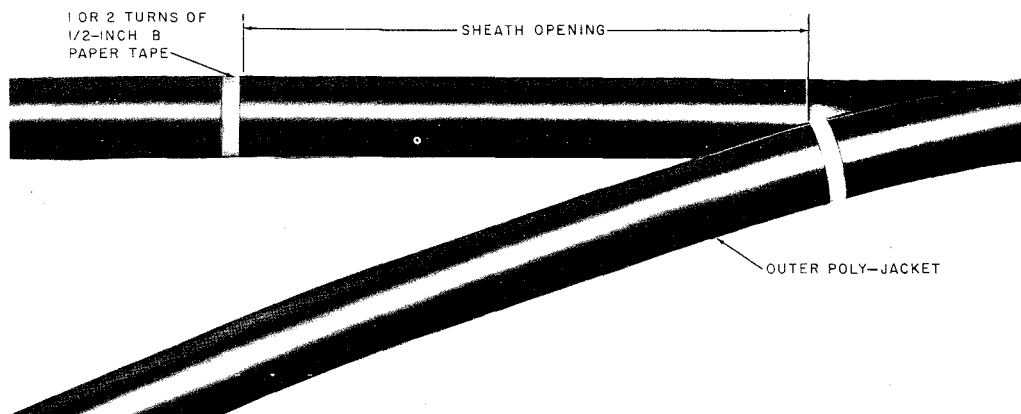


Fig. 3—Marking Cable Ends

3.02 Using a pair of scissors on small cables and a chipping knife and hammer on large cables, score the cable sheath at the marks. Score completely around the cable and **about halfway through the sheath**.

3.03 If a lead sleeve will be used to cover the splice, clean about a 4-inch length of the cable beyond each cut with a carding brush and LEPEC so that all dull spots and streaks are removed.

4. REMOVING SHEATH

LEAD

4.01 On small cables with free ends, except disc-insulated spiral-four quads and coaxials, remove the sheath without slitting. Carefully bend the cable back and forth until the sheath parts at the score marking the end of the opening. Then pull the sheath from the cable core while rotating the sheath slightly in the direction of the spiral of the core wrapping paper. Removing shorter lengths of sheath by making several scores around the cable will assist in the removal.

4.02 Use a chipping knife and hammer to slit the sheath of large cables, those containing disc-insulated spiral-four quads or coaxials, or those where the cable is continuous through the splice opening. Prior to slitting the sheath, coat the area to be slit with LEPEC to prevent the generation of airborne lead dust. Insert the chipping knife into the sheath, as shown in Fig. 4, and pry slightly each time the knife is struck to open the sheath.

4.03 After the slit has been completed, open the sheath by turning back the upper and lower portions with a hammer or pliers. Spread the sheath

until the core can be pulled out or until it is free to bend and break clear at the score marks. Inspect and remove any sharp edges or burrs from the end of the opening prior to binding the core. Do not dress down the flared edges. Figure 5 shows the sheath partially opened and the core after the sheath has been removed.

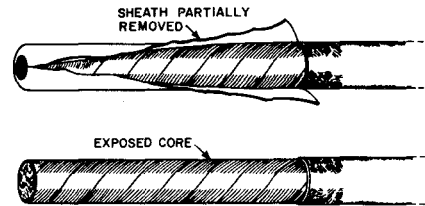


Fig. 5—Opening Sheath and Exposed Cable Core

STALPETH AND ALPETH

4.04 Either the ring method or the slitting method of removing the sheath may be used, depending on cable size and length of cable sheath to be removed.

4.05 Slit the cable if the cable size and length of sheath to be removed cannot be pulled off the cable. After marking the sheath, slit the outer polyethylene jacket as shown in Fig. 6. After removing the sheath, clean the metal with B cleaning fluid and a clean rag.

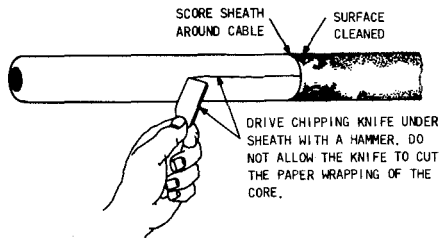


Fig. 4—Removing Sheath With Chipping Knife

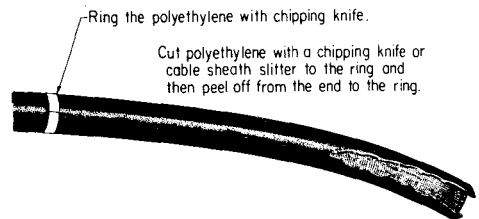


Fig. 6—Slitting Stalpeth and Alpeth Cable

4.06 If removing the sheath by the ring method, mark the sheath 1 inch and 4 inches inside the sheath opening mark (Fig. 7). With the chipping knife, score the polyethylene halfway through and completely around each cable at the 1-inch and 4-inch marks.

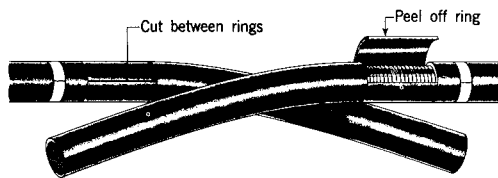


Fig. 7—Marking Cable Using Ring Method

4.07 Remove the 3-inch rings of polyethylene by first cutting the ring lengthwise with the chipping knife or cable sheath splitter, then peel off the rings (Fig. 8).

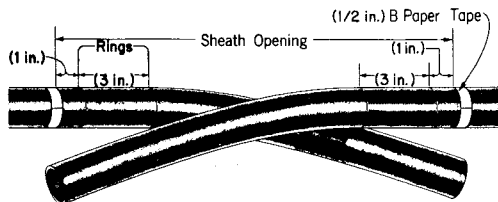


Fig. 8—Removing 3-Inch Rings of Polyethylene

4.08 Cut the exposed metal lengthwise and remove (Fig. 9).

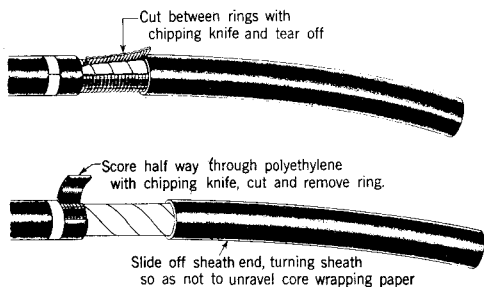


Fig. 9—Cutting and Removing Exposed Metal

4.09 Prepare stalpeth and alpeth cable as shown in Fig. 10 and 11.

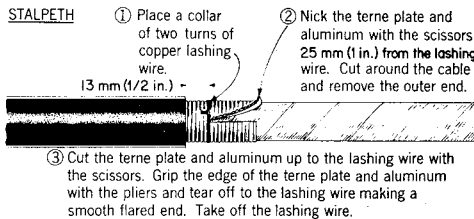


Fig. 10—Preparing Stalpeth Sheath

Clean 25 mm (one in.) of the metal adjacent to the polyethylene

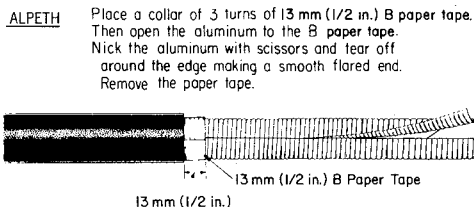
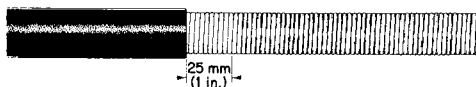


Fig. 11—Preparing Alpeth Sheath

PAP AND PASP

4.10 Either the ring method or the slitting method of removing the sheath may be used, depending on cable size and length of cable sheath to be removed.

4.11 Slit the cable if the cable size and length of sheath to be removed cannot be pulled off the cable. After marking the length of the sheath opening, use an R-2761 skinning knife, chipping knife, or cable splitter to ring and slit the outer polyethylene jacket, and remove it as shown in Fig. 12

4.12 On *PAP sheath* cable, place a collar of 3 turns of 1/2-inch B paper tape around the aluminum shield 3 inches from the sheath opening marker toward the cable end. Open and remove the aluminum shield as shown in Fig. 13.

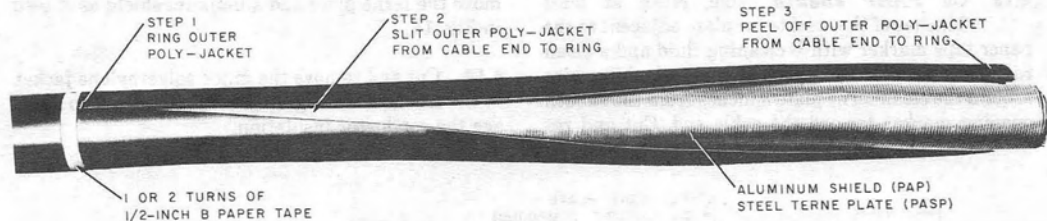


Fig. 12—Cutting and Removing Outer Polyethylene Jacket

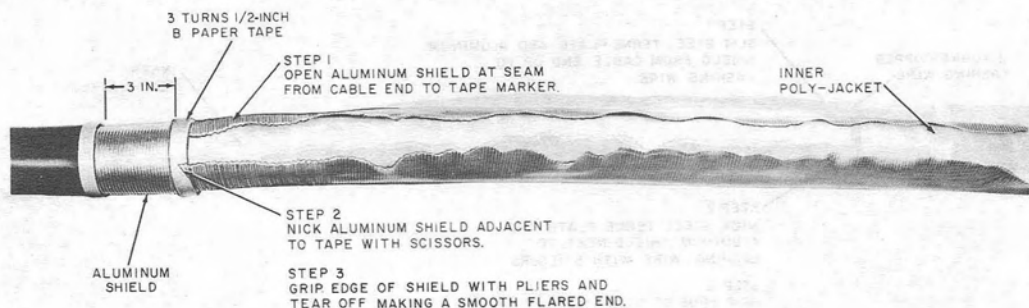


Fig. 13—Cutting and Removing Aluminum Shield on PAP Sheath



Fig. 14—Cutting and Removing Inner Polyethylene Jacket

4.13 On *PASP sheath* cable, clean at least 3 inches of the steel terne plate adjacent to the paper tape marker with B cleaning fluid and a clean rag. Place a collar of 2 turns of copper lashing wire around the clean terne plate 3 inches from the sheath opening marker toward the cable end. Cut and re-

move the terne plate and aluminum shield as shown in Fig. 14.

4.14 Cut and remove the inner polyethylene jacket as shown in Fig. 15. Exercise care not to damage the conductor insulation.

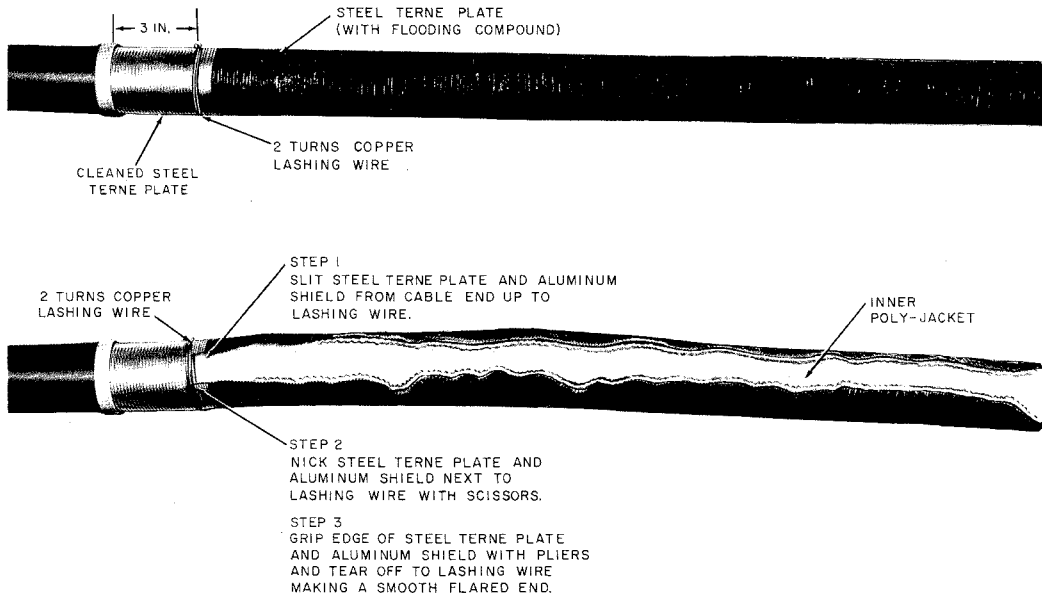


Fig. 14—Cutting and Removing Metal Shields on PASP Sheath

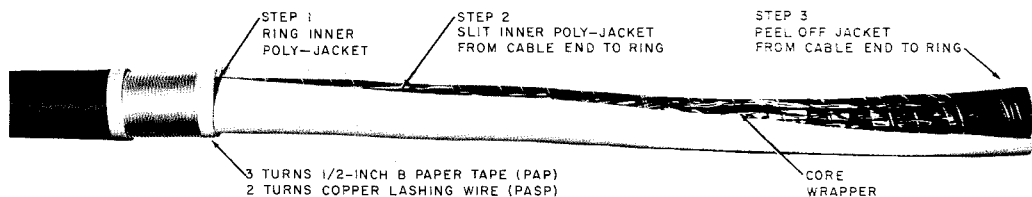


Fig. 15—Cutting and Removing Inner Polyethylene Jacket

- 4.15 Remove the paper tapes (PAP) or the paper tape and lashing wire (PASP).
- 4.16 If removing the sheath by the ring method, using an R-2761 skinning knife, or a chipping knife, **ring only** the outer polyethylene jacket (Fig. 16) at the B paper tape marker and 6 inches away from the paper marker toward the cable ends.

Slit and remove the outer polyethylene jacket ring as shown in Fig. 17.

- 4.17 On **PAP sheath** cable, place a collar of 3 turns of 1/2-inch B paper tape around the aluminum shield 3 inches from the sheath opening marker and 6 inches away from the paper marker toward the cable end. Remove the aluminum shield as shown in Fig. 18.

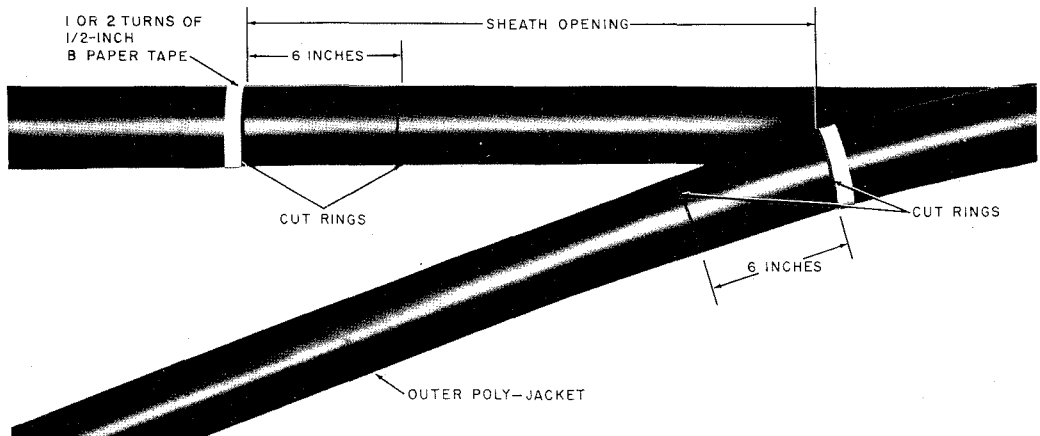


Fig. 16—Cutting Rings in Outer Polyethylene Jacket

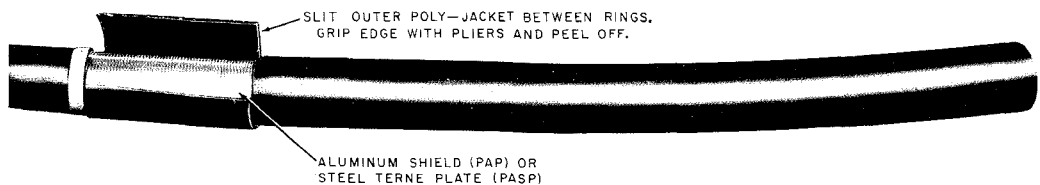


Fig. 17—Cutting and Removing Outer Polyethylene Jacket Ring

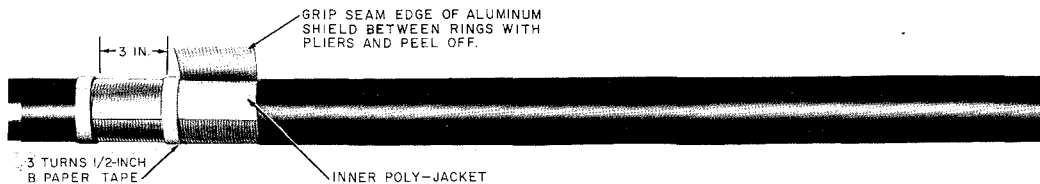


Fig. 18—Cutting and Removing Aluminum Shield on PAP Sheath

4.18 On *PASP sheath* cable, clean at least 3 inches of the steel terne plate adjacent to the paper tape marker with B cleaning fluid and a clean rag. Place a collar of 2 turns of copper lashing wire around the clean terne plate 3 inches from the sheath opening marker toward the cable end. Cut and remove the terne plate and aluminum shield as shown in Fig. 19.

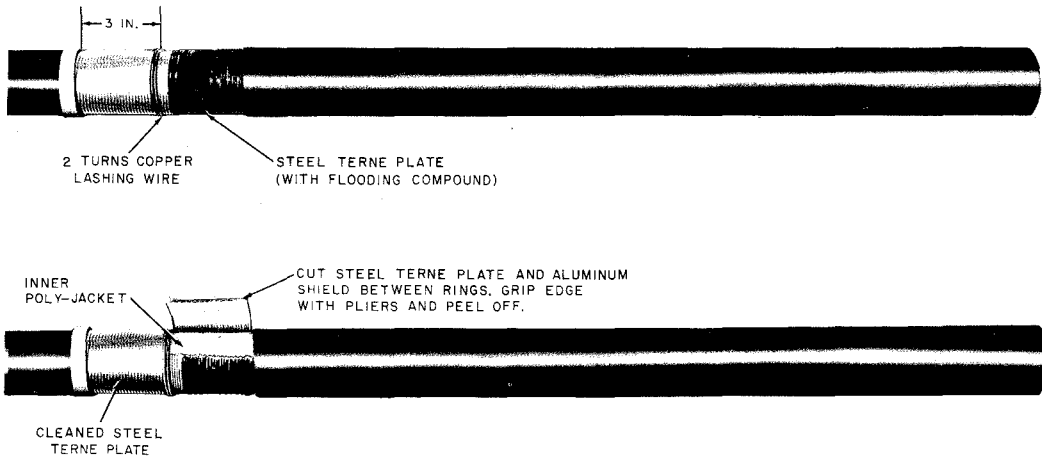


Fig. 19—Cutting and Removing Metal Shields on PASP Sheath

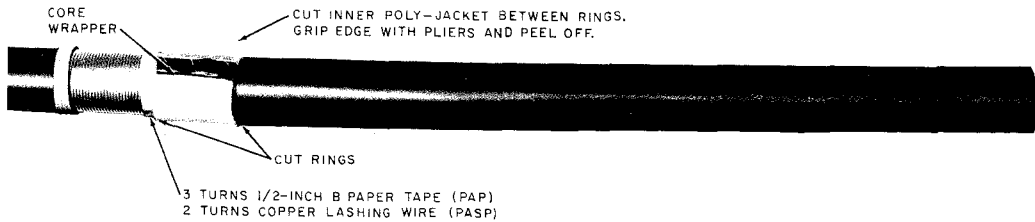


Fig. 20—Cutting and Removing Inner Polyethylene Jacket

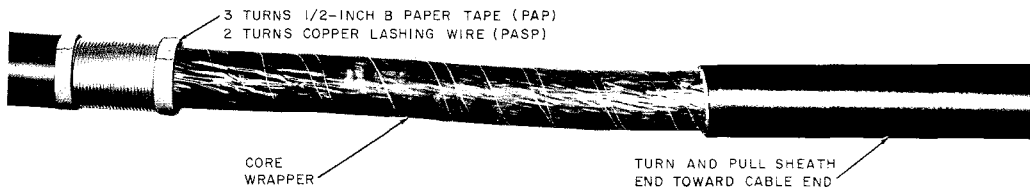


Fig. 21—Removing Sheath End

4.19 Cut and remove the inner polyethylene jacket as shown in Fig. 20. Exercise care not to damage the conductor insulation.

4.20 Remove the sheath end by simultaneously turning and pulling the sheath so as not to unravel the core wrapper (Fig. 21). Remove the paper tapes (PAP) or the paper tape and lashing wire (PASP).

LEPETH

4.21 When working on lepeth cable, observe precautions outlined in Section 2.

4.22 Remove the lead sheath as outlined in paragraphs 4.01 through 4.03. When working on lepeth sheath ends, inspect the end of the sheath and remove any lead projections which press against the polyethylene. Clean the polyethylene as shown in Fig. 22.

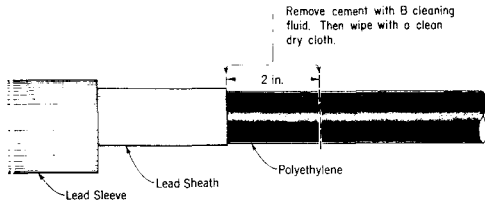


Fig. 22—Cleaning Lepeth Sheath End

4.23 Remove the polyethylene to within 1 inch of the lead sheath. Then slip an end plate over the lead sheath.

4.24 Scuff the exposed polyethylene and the lead sheath with a carding brush from the sheath butt to the wiping area and place one turn of 3/8-inch vinyl tape 7/8 inch from the end of the lead sheath. Do not put stearine on the lead sheath between the sheath butt and the vinyl tape marker. Coat the lead sheath and polyethylene with C cement as shown in Fig. 23.

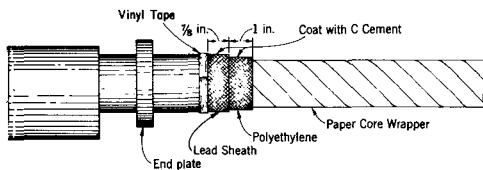


Fig. 23—Coating Sheath End

4.25 Allow the C cement to dry about 5 minutes and then remove the vinyl tape. Starting on the lead sheath, apply one 2/3-lapped layer of 3/4-inch DR tape over the cemented area and about 1/8 inch of the paper core wrapper. In applying the tape, stretch it so that its width is reduced to about 5/8 inch.

4.26 Place two half-lapped layers of 3/4-inch electrical tape over the DR tape wrapping and bind down with rubber cord, as indicated below. The rubber cord should be applied with a tension which elongates the cord about 50 percent, and the ends should be tied with a square knot. A completely prepared end is illustrated in Fig. 24.

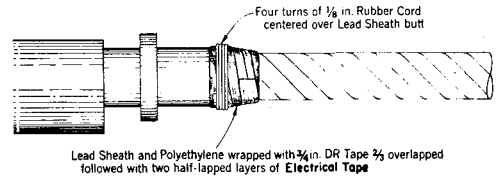


Fig. 24—Prepared End

4.27 The tape wrappings provide the necessary protection for the core at the end of the sheath and no additional wrapping is required after the paper core wrapper is removed.

4.28 Terminals used with lepeth sheath main cable have lepeth sheath stubs. Remove and terminate the sheath as outlined in Section 632-319-211.

POLYETHYLENE

4.29 When working on polyethylene jacketed cable ends with a lead sheath, the lead sheath is somewhat thinner than an ordinary lead sheath cable. Care should be taken in beating in the lead sleeve to avoid damaging the lead sheath.

4.30 The polyethylene and lead sheath are removed as shown in Fig. 25.

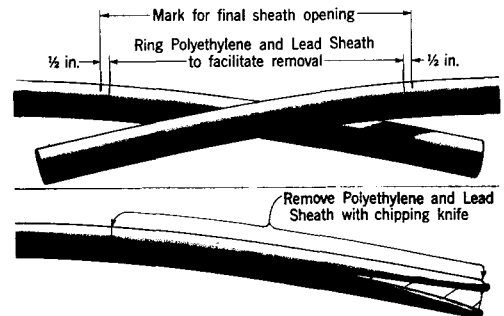


Fig. 25—Marking and Removing Polyethylene and Lead Sheath

4.31 The lead sheath is then exposed at each end for a distance of 6-1/2 inches. Carefully score the polyethylene as shown in Fig. 26. Peel off the polyethylene so as to avoid damaging the lead sheath. The compound can be cleaned from the lead sheath using B cleaning fluid.

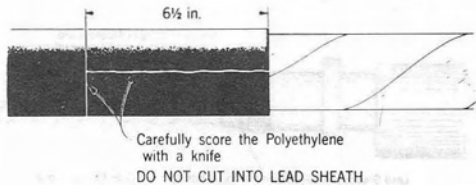


Fig. 26—Exposing Lead Sheath for Wiping

4.32 A 1/2-inch strip of the lead sheath is now removed, as shown in Fig. 27, to flare the sheath ends and provide the correct length of opening.

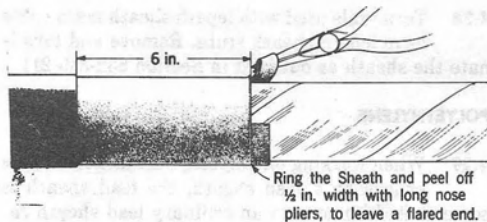


Fig. 27—Final Preparation of Lead Sheath

4.33 The ends of the polyethylene are permanently wrapped, as shown in Fig. 28, to prevent enlargement due to softening during wiping operations.

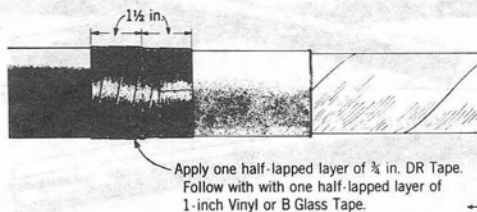


Fig. 28—Wrapping End of Polyethylene

BONDED ASP AND STALPETH

4.34 The bonded versions of ASP and stalpeth sheaths differ from regular sheath in that they have a thin polyethylene coating on the steel. The steel is bonded to the polyethylene jacket during manufacture.

4.35 When removing the sheath on bonded ASP and stalpeth, the jacket of polyethylene and steel must be removed as a unit. After ringing the sheath, make a longitudinal cut by heavily scoring the sheath and split using a hammer and chipping knife (Fig. 29). The sheath can now be peeled open as shown in Fig. 30. Removing bonded sheath has similar characteristics as removing regular ASP and stalpeth sheath in cold weather.

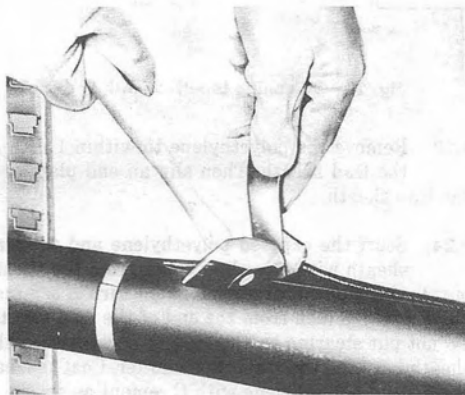


Fig. 29—Splitting Bonded Sheath

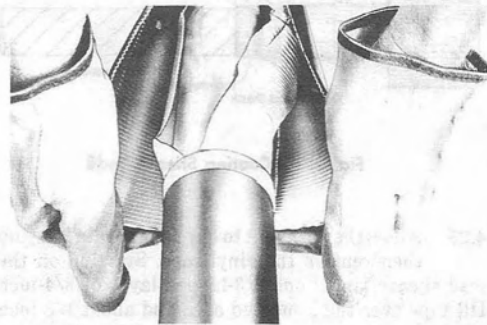


Fig. 30—Opening Bonded Sheath

5. PROTECTIVE WRAPPING (LEAD SHEATH)

5.01 The reasons for the wrapper at the end of the sheath are to maintain the dielectric strength between the core and the sheath and to prevent damaging the insulation in bending back the conductors prior to splicing.

5.02 Before placing the protective wrapping on multiple-unit type cables, rotate the layers so that corresponding units will be in line across the splice. **Do not rotate** the core in cables containing coaxials or disc-insulated spiral-four quads because damage to these units may occur.

5.03 The protective wrapping may be made with either B paper tape or 1-inch cotton tape (dry). When using B paper tape, wrap three to six layers tightly around the core wrapper adjacent to the end of the sheath as shown in Fig. 31.

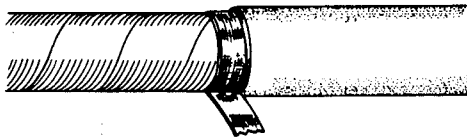


Fig. 31—B Paper Tape Binding

5.04 The 1-inch cotton tape may be applied by wrapping it tightly around the core wrapping paper and extending it under the edge of the sheath by rotating the first layer of tape while pushing it toward and under the sheath as shown in Fig. 32. Continue the wrapping over the core and back over the sheath. Terminate with a slip tie and cut off the excess tape. Figure 33 shows a completed wrapping.

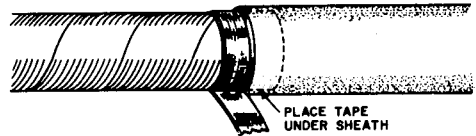


Fig. 32—Placing Cotton Tape Under Sheath



Fig. 33—Completed Cotton Tape Binding

5.05 At a Y splice, the protective wrappings for the two cables are placed separately and a temporary tie is used to hold the cables together while splicing as shown in Fig. 34. A permanent tie between the two cables may be used after splicing is completed and the lead wedge is placed.

5.06 After the protective wrapping is completed, unwind the paper wrappers on the core and carefully tear off each wrapper at the edge of the protective wrapping.

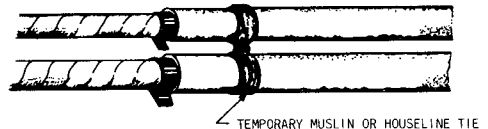


Fig. 34—Binding Core at a Y Splice