**BELL SYSTEM PRACTICES**
**Outside Plant Construction and Maintenance**

**SECTION G50.679.3**
**Issue 3, January, 1956**
**AT&TCo Standard**

# CABLE SPLICING — GENERAL
# WRAPPED JOINT — AUXILIARY SLEEVE ALPETH SHEATH

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## 1. GENERAL

1.01 This section replaces Issue 2 and describes the method of making a wrapped, gastight, straight joint between the outer end of the auxiliary sleeve and the sheath at splices in alpeth sheath cable. The method of completing the splice is included.

1.02 This section has been reissued to include a change in the method of soldering the sleeve to the wire cloth to increase the mechanical strength between the sleeve and the cable. **The outer wrapping of the joint has been changed for aerial use.** The outer wrapping for underground or buried use is covered in another section of the Practices.

1.03 The auxiliary sleeve method should be used when:

(a) The outside diameter of the main sleeve is more than one inch greater than the outside diameter of the cable.

(b) At Y splices.

(c) When position of splice makes it necessary to construct the splice before the cable is in its permanent position.

1.04 In other instances use the main sleeve method covered in another section of the Practices.

1.05 This joint is suitable on cables to be maintained under continuous pressure. The final wrapping for cables under continuous pressure is covered in another section of the

Practices. It can also be used to repair leaks in existing joints made by the superseded inner wrap method.

## 2. AUXILIARY SLEEVES

2.01 The auxiliary and main sleeves should preferably be placed and all the tape wrappings except the final wrapping made on the alpeth sheath cable before the conductors are spliced.

2.02 The auxiliary sleeve should be at least six inches long and the next size larger in diameter than the cable. Where the splice is to be supported on racks in a cable vault or manhole, make the auxiliary sleeves longer if necessary, to properly support the splice and keep the tape wrappings off the cable hooks.

2.03 Remove the identification ridges from the auxiliary sleeves to avoid the possibility of leaks in the wrappings at this point.

2.04 If a split lead sleeve is used, it should be beveled one-half its thickness and the seam soldered in the usual manner. The polyethylene under the sleeve should be wrapped with muslin to prevent damage to the plastic while soldering.

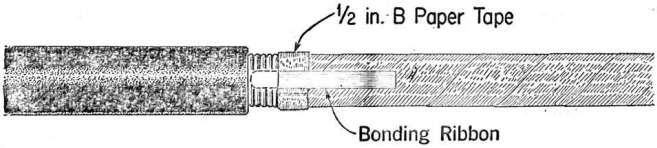
## 3. END PLATES AND WEDGES

3.01 If end plates or wedges are used, the **diameter over the auxiliary sleeve** shall be used to determine the size of the core plug or wedge.

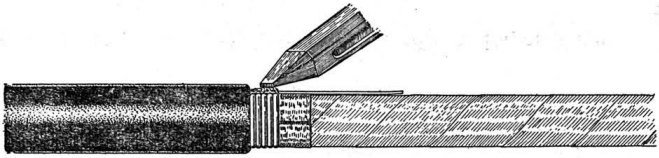
## 4. PREPARATION OF BOND

4.01 A length of bonding ribbon about two inches longer than the auxiliary sleeve is required. The bond is placed as follows:

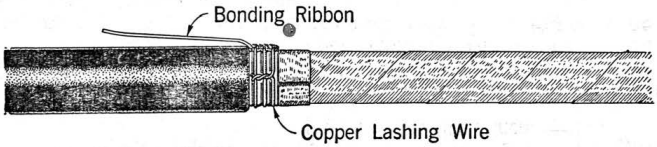
Place two turns of ½ in. B Paper Tape smoothly over core wrapper adjacent to aluminum. Then insert a strip of bonding ribbon between the core wrapper and aluminum. With the scissors smooth out corrugations in the aluminium over the bonding ribbon and then clean the area, using the cutting edge of the scissors.



Drop some molten aluminum solder on the cleaned area. Rub the edge of the soldering copper back and forth over the cleaned area to remove the oxide film on the aluminum so that the solder will form a bond and complete tinning by applying small quantity of rosin core solder to the surface. Then remove the bonding ribbon.

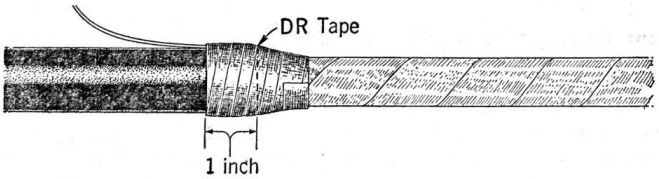


Shape a strip of bonding ribbon to fit over the aluminum and the cable sheath as shown below. Hold the bonding ribbon in place with three turns of copper lashing wire as illustrated. Then solder the bonding ribbon and lashing wire to the aluminum with rosin core solder.




4.02 Wrap the cable end.

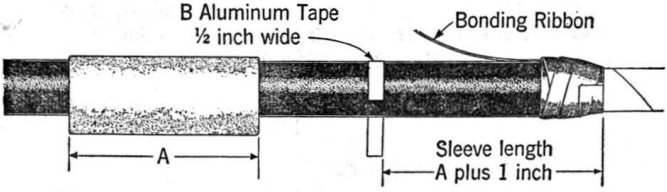
Apply two half-lapped layers of ¾ in. DR Tape extending over the paper tape and about one inch of the polyethylene sheath.



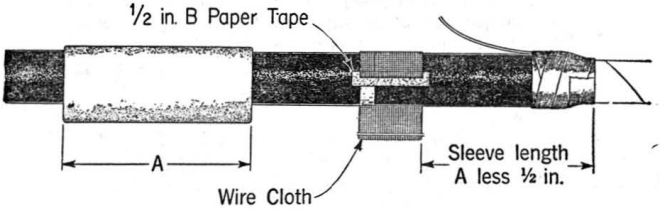
## 5. WRAPPING AUXILIARY SLEEVE

5.01 Prepare a length of clean wire cloth to encircle the cable and provide an overlap of approximately one inch.

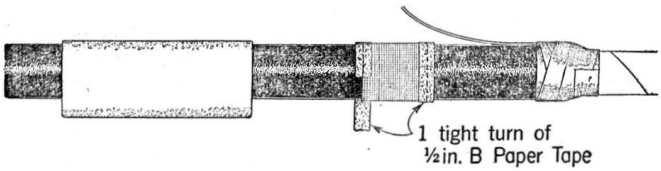
5.02 Cut a 1/2-inch wide piece of B Aluminum Tape long enough to encircle the cable in the position shown. It prevents the polyethylene from melting and oozing into the wire cloth mesh when the copper is applied in soldering the sleeve to the wire cloth.



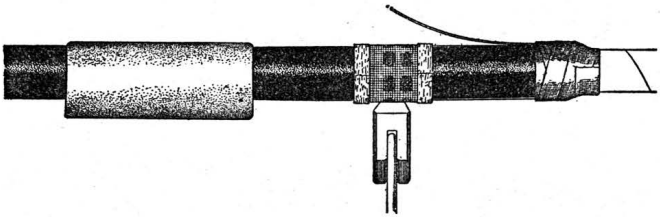

5.03 To prevent piercing of the polyethylene by the wire cloth ends, place B Paper Tape on the sheath. Then place the starting edge of the wire cloth over the B Paper Tape and wrap tightly around cable.



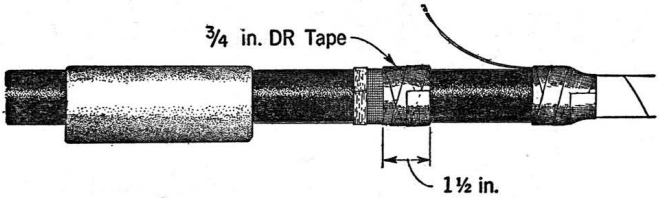

5.04 Hold the wire cloth in position with B Paper Tape.



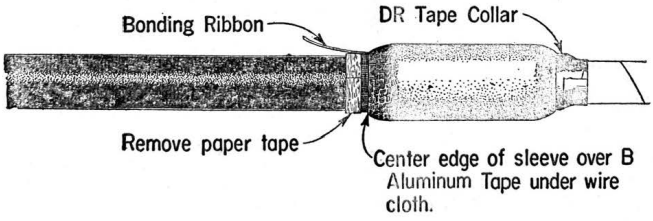
5.05 With a hot copper held against the wire cloth, heat the plastic at a number of points all around the cable. Black patches will show in the wire cloth when the plastic is soft enough. Do not overheat the polyethylene and do not use the point or an edge of the copper.



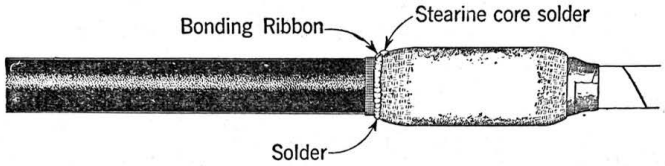
5.06 Wrap the wire cloth tightly with one half-lapped layer of 3/4-inch DR Tape.



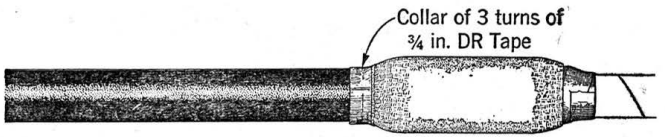

5.07 Position the sleeve on top of the DR Tape Collar with bonding ribbon passing through the sleeve. Beat the sleeve in tightly over the wire screen cloth and bonding ribbon. Then beat it in lightly over the DR Tape. Remove the paper tape collar from the wire screen cloth.



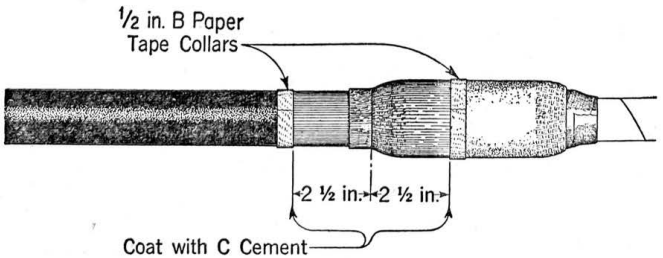
5.08 Lightly coat the exposed wire cloth with stearine. Cut off the bonding ribbon 1/4 inch from the sleeve, bend it back over the sleeve and solder. Then solder the sleeve to the wire cloth encircling the sleeve as far as practicable. The solder should flow into the wire cloth mesh in order to develop good mechanical strength.



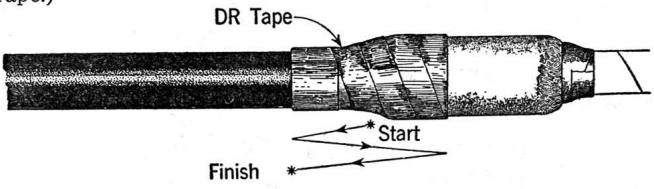

5.09 Place a collar over the wire cloth next to the sleeve to provide a buildup. The collar may extend over the solder but should not be carried up the sleeve.



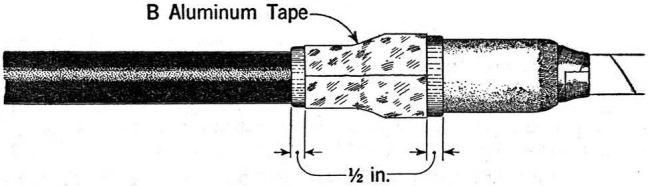

5.10 Clean the sleeve and scuff the sheath to a uniformly dull surface with the carding brush. Place 1/2-inch B Paper Tape Collars on the sheath and sleeve, and coat the enclosed area with C Cement. Remove the paper tape collars. Allow 3 to 5 minutes drying time in warm weather and 5 to 10 minutes in cold weather.



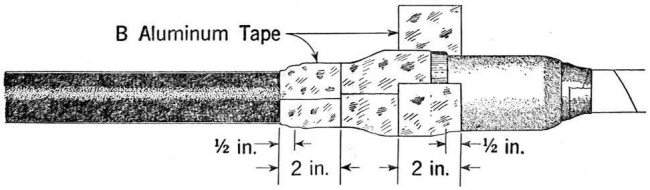
5.11 Apply 2-1/2 half-lapped layers of 2-inch DR Tape, but no more, over the cemented area. In applying the tape, it should be stretched to reduce its width to 1-1/2 inches. (This is a means of specifying the correct tension in the DR Tape.)




5.12 Apply a collar of three turns of B Aluminum Tape centered on the DR Tape. Iron smoothly in place with the handle of the dresser or the carding brush.

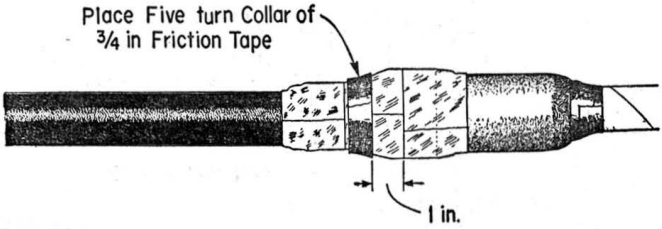



5.13 Apply a 1-1/4-turn wrapping of 2-inch wide B Aluminum Tape at each end, extending beyond the exposed DR Tape 1/2 inch. Then iron the 2-inch widths in place smoothly.



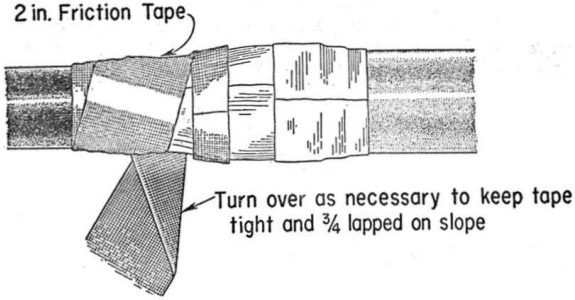

5.14 **The outer wrappings provided in the following paragraphs are for use on aerial cable.** The outer wrappings for underground plant are covered in another section of the Practices.

5.15 At the point directly over the three turn collar of DR Tape placed in Paragraph 5.09, place a tight collar of five turns of 3/4-inch friction tape.

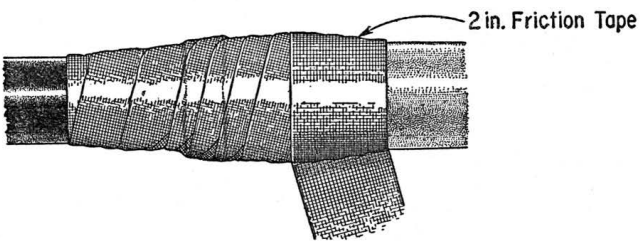



5.16 In the following Paragraphs 5.17 to 5.19, inclusive, 2-inch friction tape is illustrated. However, on cables of 1-inch and less in diameter, 3/4-inch friction tape is used instead of 2-inch friction tape, and applied in the same manner.

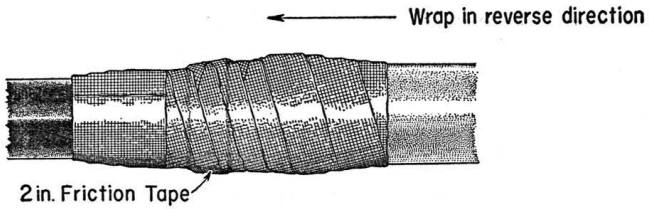
5.17 Starting on the sheath just beyond the outer edge of the B Aluminum Tape, apply a half-lapped layer of 2-inch friction tape toward the sleeve. As the slope of the sleeve is reached turn the friction tape over as necessary to keep the tape tight on the slope and increase the overlap to three-quarters on the slope.




5.18 Continue the friction tape wrappings just beyond the end of the aluminum tape on the auxiliary sleeve.

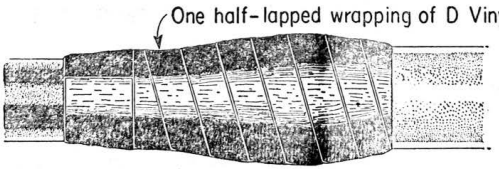



5.19 Place a second half-lapped layer of friction tape.




5.20 Tear off the core wrapper before commencing to splice.

5.21 After wiping the joints and when the joints have cooled to atmospheric temperature, finish with a half-lapped layer of D Vinyl Tape applied over the friction tape. This black vinyl plastic tape has good outdoor weathering characteristics. Starting on the sleeve just beyond the edge of the friction tape apply it under slight tension. The last turn should extend just beyond the edge of the friction tape on the cable. **The last turn should be laid on free from all tension so that the end of the tape will not start to curl back.**



## 6. BEATING-IN AND WIPING

6.01 On completion of the wire work wrap the splice, then place and beat in the main sleeve on the auxiliary sleeves and apply the cable pasters as indicated below. Wipe the joints.