BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G31.130.1
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AT&TCo Standard

OPEN WIRE
DEAD ENDING

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1. GENERAL

1.01 This section describes the methods of dead ending the various kinds of open wire.

1.02 It is reissued to include information on the use of the 31-QC and the 51-JE Nicopress Tools for pressing Dead-End Sleeves.

2. MATERIALS

2.01 Materials to be used in dead ending are listed in the following table:

Line Wire		Dead Ending with Dead-End Wires				Dead Ending with Dead-End Sleeves	
		Dead-End Wires		Sleeves		Dead-End Sleeves	
Kind	Size	Galv. Steel	Stainless Steel	S Copper	S Steel	B-Copper	Offset (Steel)
Copper	080					080	
	104					104	
	128					128	
	165					165	
Copper Steel	080					080	
	104					104H	
	128		128H	128H			
Steel	083	109			109x083		
	083H	109			109x083		
	109	109			109		
	109H	134			134x109		
	109E						109
	134	134			134		
	134H						109*

*In dead ending 134H Steel Line Wire, the dead-end loop is made with 109E wire and joined to the 134H wire with a 134H x 109H combination S Steel Sleeve.

3. DEAD ENDS USING DEAD-END WIRES

3.01 Dead ends using dead-end wires and S Sleeves are assembled as illustrated in Fig. 1.

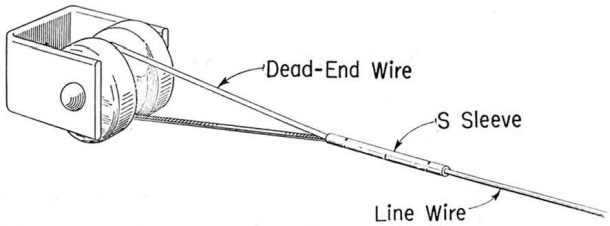

Fig. 1

Dead-end wires have a semicircular cross-section. When the ends of the wire are pulled together evenly, with the flat sides in contact, they form a circular section which can be inserted into an S Sleeve. (See Fig. 1.)

3.02 Dead-end wires are available only in the galvanized steel and stainless steel types.

3.03 Dead-end wires in the 128H size are made from stainless steel. The dead-end wires in the 109 and 134 size are made of galvanized steel.

3.04 The size of dead-end wire used will depend upon the size of the line wire and should be selected in accordance with the table in Paragraph 2.01.

3.05 The steps to be taken in making dead ends using dead-end wire are detailed below.

(1) Select a dead-end wire in accordance with the above table.

(2) Place the dead-end wire in the wire groove of an insulator with the flat surface against the insulator.

(3) Bend the center portion of the dead-end wire around the insulator so that the two end positions cross each other, as shown below in Fig. 2.

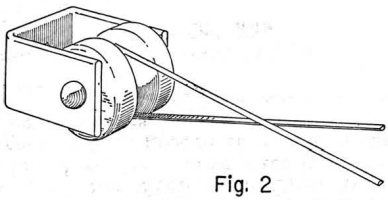

Fig. 2

(4) Bend the flat sides of the dead-end wire together with the ends even, as shown in Fig. 3 and push them into the appropriate end of an S Sleeve until the constriction in the sleeve is reached.

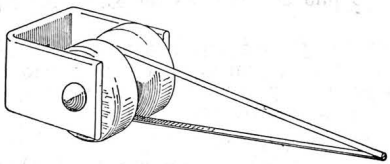

Fig. 3

(5) Make an indentation about 1/4 inch from the end of the sleeve with the cutting edge of the side cutting pliers to hold the dead-end wire in the sleeve.

(6) With the line wire pulled to the desired sag, cut it about 1/4 inch short of the mid-point of the S Sleeve so that the proper sag will be maintained after the sleeve is rolled or pressed. Clean the end of the line wire with abrasive cloth.

(7) Pull the line wire up so that the end of the line wire will easily reach the mid-point of the sleeve, insert the line wire in the sleeve, and indent the sleeve in the usual manner.

(8) Place the sleeve in the proper groove of the sleeve roller and roll the sleeve (see Fig. 4) or press with a Nicopress Tool. See Section on Open Wire, Sleeves for Joining Line Wire, for groove sizes in sleeve roller or for correct pressing tool, groove sizes, and number of presses for pressing S Sleeves.

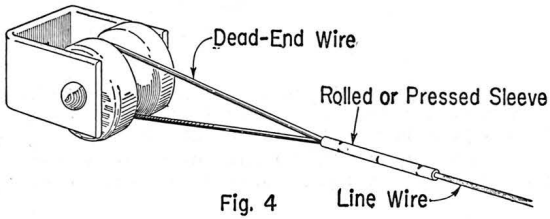

Fig. 4

4. DEAD ENDS USING DEAD-END SLEEVES

4.01 There are two types of dead-end sleeves, namely, the B Copper Dead-End Sleeve (furnished in five sizes) for use in dead ending 080, 104, 128 and 165 copper line wires, and 080 and 104 copper-steel line wires, and the Offset Dead-End Sleeve for use in dead ending 109E and 134H steel line wires, as listed in the table in Paragraph 2.01. The sizes of B Copper Dead-End Sleeves are stamped on the sleeves for easy identification.

4.02 The steps to be taken in dead ending with dead-end sleeves are detailed below.

(1) Select a dead-end sleeve in accordance with the table in Paragraph 2.01.

(2) After cleaning the line wire with abrasive cloth, pass a sufficient length of the line wire through either end of the dead-end sleeve and place the wire in the wire groove of an insulator.

(3) Bend the line wire around the insulator and pass the end of the wire through the empty end of the dead-end sleeve as shown in Fig. 5.

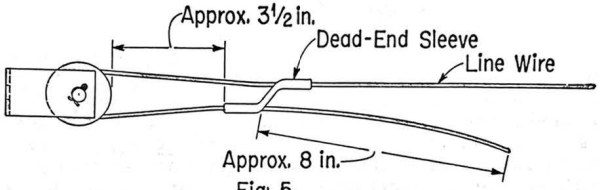

Fig. 5

(4) Make an indentation about 1/4 inch from each end of the sleeve with the cutting edge of the side cutting pliers to hold the sleeve in the desired position. See Fig. 6.

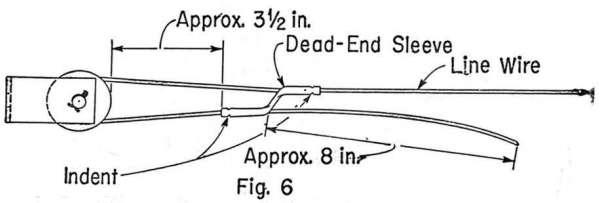

Fig. 6

(5) In the case of B Copper Dead-End Sleeves, roll each end of the sleeve with the sleeve roller, starting at the end of the sleeve and rolling up to the bend of the offset, then reversing the Ratchet Reversing Latch and rolling back to the end of the sleeve. (For the 080 and 104 sizes, the small groove of the sleeve roller will be used; for the 104H and 128 sizes, the middle groove will be used; and for the 165 size, the large groove will be used.)

(6) B Copper Dead-End Sleeves may also be applied with a Nicopress Tool. The 104 and 080 sizes require 2 presses on each end in the C groove of the 31-QC Nicopress Tool; the 104H and 128 sizes require 3 presses on

each end in the Q groove of the 31-QC Nicopress Tool; and the 165 size requires 3 presses on each end in the J groove of the 51-JE Nicopress Tool. The first presses are made at the inside about 1/8 inch from the bend of the offset. The other presses should be spaced so about 1/8 inch is left unpressed at end of the sleeve. When using the Q or J groove in pressing the offset leg of the dead-end sleeve, take care to prevent damaging the adjacent line wire with the pressing jaws. Such damage may be avoided by letting the line wire rest in the C or E groove during the pressing operation. See Fig. 7.

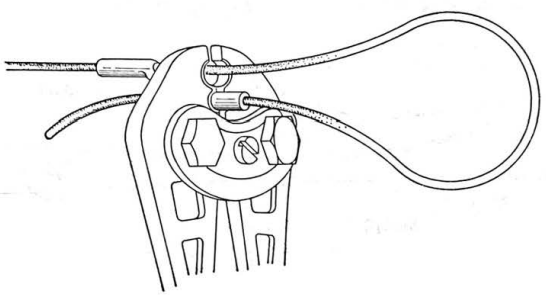

Fig. 7

(7) In the case of the offset (109 steel) Dead-End Sleeve, 3 presses are made on each end of the sleeve in the J groove of the 51-JE Nicopress Tool. The first presses are made at the inside about 1/8 inch from the opening at offset. The other presses should be spaced so at least 1/8 inch is left unpressed at each end of the sleeve as illustrated in Fig. 8.

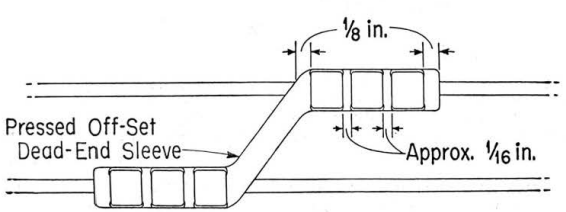

Fig. 8

(8) After the sleeve has been either pressed or rolled, the free end of the line wire (about 8 inches in length) is bent down and back to form a loop as illustrated in Fig. 9. The end of the wire should be about even with the end of the sleeve nearest the insulator. This loop is used for bridling purposes. If bridle wire is not connected when wire is dead-ended, tape end of line wire to dead-end sleeve.

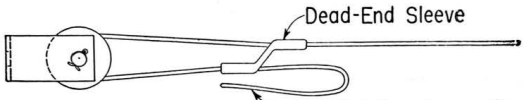

Fig. 9