BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G73.155.1
Issue 1, January, 1953
AT&T Co Standard

PRESSURE TESTING
LEAD SLEEVE TYPE TERMINAL PLUGS

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1. GENERAL

1.01 This section describes the lead sleeve method of constructing pressure plugs in distribution terminals. This section replaces Section G50.672.1, Issue 1, which is cancelled.

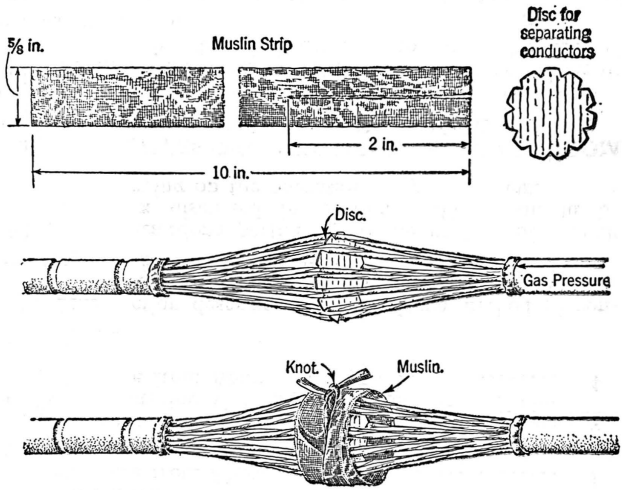
1.02 The precautions pertaining to the heating of asphalt and wax discussed in Section G73.150.1 should be observed in carrying on the operations outlined herein.

2. CABLES ENTERING VERTICAL SLEEVE FROM BOTH ENDS—PRESSURE FROM ABOVE

2.01 The gas plug described below is intended primarily for plugging the stubs of F-type and similar terminals under conditions in which it is essential to use as short a lead sleeve as practicable.

2.02 **Preparation of Cable:** The terminal should be removed from the pole and suspended as shown in the sketches in Paragraph 2.09. At the point where the plug is to be made,

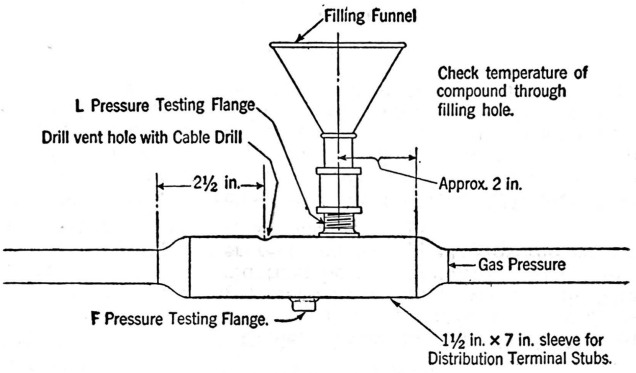
approximately four inches of sheath should be removed. The cable ends should be wrapped with cotton tape and the conductors ballooned by placing a notched cardboard or fibre disc about one inch in diameter, as shown on the following illustration. Wrap the disc and core with a strip of muslin as shown in the sketch to hold the disc in place and to prevent the conductors from coming in contact with the lead sleeve.



2.03 Two rings should be formed in the sheath at the lower or low pressure end, as shown in the above sketch. No core pin is required in this type plug. However, the rings should be made about 1/16 inch deep using the cable sheath constrictor. The first ring should be located 1/2 inch from the end of the sheath and the second, one inch from the first.

2.04 **Preparation of Sleeve:** A lead sleeve 1-1/2 inches inside diameter and seven inches long should be prepared and the L and F pressure testing flanges should be soldered to the sleeve, as shown below. Any burr formed on the inside of the sleeve by the drilling operations should be removed.

2.05 Place the prepared sleeve over the opening, beat in the ends and wipe the joints.

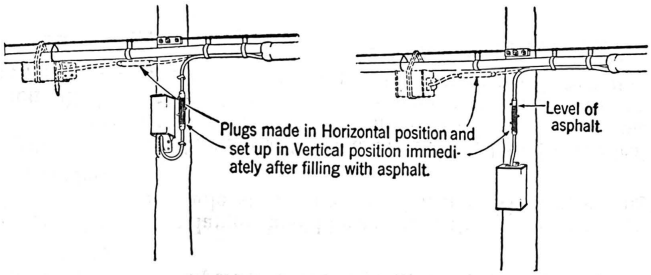


2.06 It is advisable to start impregnating the core as soon after the joints have been wiped as practicable. Pour one dipper of No. 1 Pressure Plug Wax heated to a temperature of 350° F. and allow to drain through. Then close the drainage hole with an F flange plug and fill the sleeve with hot wax allowing it to stand for five minutes, after which the plug should be removed and the sleeve drained.

2.07 **Filling Sleeve with Asphalt:** When the sleeve has drained, the lower flange should be permanently closed with an F flange plug. The sleeve should then be filled with No. 1 Pressure Plug Asphalt heated to a temperature of 200° to 220° F. At this temperature the asphalt flows into the sleeve very slowly.

2.08 The upper flange should be sealed with an L flange plug. The vent hole should be sealed using a B screw plug and solder.

2.09 The completed plug should be mounted in its vertical position as soon as practicable after the sleeve has been filled in order that the asphalt may adjust itself to the new position before the asphalt sets. Two typical terminal arrangements are shown on next page.



3. CABLES ENTERING VERTICAL SLEEVE FROM BOTH ENDS—PRESSURE FROM BELOW

3.01 Where this condition is encountered in plugging a terminal stub on a pole or building wall, a plug of the type described in Part 3, Section G73.153.1 can be constructed in the terminal stub or riser cable.

4. CABLES ENTERING VERTICAL SLEEVE FROM SAME END—PRESSURE FROM ABOVE

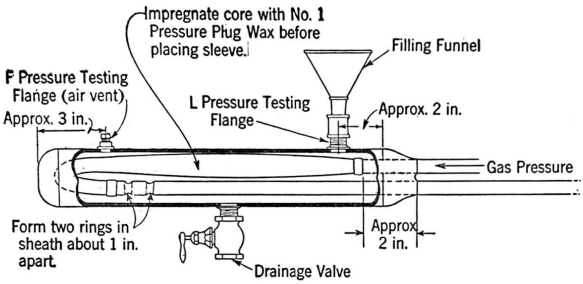
4.01 The gas plug described below is applicable to plugging terminal stubs under conditions in which the length of the lead sleeve is not a controlling factor.

4.02 **Preparation of Cable:** Approximately 11 inches of sheath should be removed, being careful to avoid damaging the core wrapping paper at the end of the sheath. The ends of the sheath should then be wrapped with cotton tape, the core wrapping paper removed to the edge of the cotton tape, and the conductors ballooned.

4.03 No core pins are required, but two rings 1/16 inch deep should be formed in the sheath at the low pressure end, using the cable sheath constrictor. The first ring should be 1/2 inch from the end of the sheath and the second ring one inch from the first. The exposed core should be wrapped loosely with cotton sleeving, the turns being about 1/2 inch apart.

4.04 The core should then be boiled with No. 1 Pressure Plug Wax heated to a temperature of 350° F.

4.05 **Preparation of Sleeve:** A lead sleeve 2 inches in diameter and 10 inches long should be prepared and equipped wth two L pressure testing flanges and one F pressure testing flange, as shown below:



4.06 The prepared sleeve should be placed on the cable so that the core of the cable at the capped end clears the sleeve about one inch, as shown in the above sketch. The sleeve ends should then be beaten in and the joints wiped.

4.07 **Filling Sleeve with Asphalt:** A 12-quart pot of hot No. 1 pressure plug asphalt may be used in filling the sleeve. The asphalt is heated to a temperature of 200° to 220° F. At this temperature the asphalt flows into the sleeve very slowly.

4.08 The sleeve should be filled with asphalt as soon after wiping the joints as practicable. Asphalt should be poured into the funnel until the sleeve is filled. During the operation the wiped joints should be tapped with a cable dresser to force out any air that may be trapped at the ends of the sleeve. Then the pouring should be continued slowly, keeping the funnel full, until the flow from the funnel into the sleeve has almost ceased at which time no more asphalt should be added. At this stage the funnel should be removed without waiting for the asphalt to settle further.

4.09 The flanges should now be closed with flange plugs in the usual way. The sleeve should then be placed in a vertical position as soon as practicable so that the asphalt may adjust itself before it hardens.

4.10 Two methods of mounting the plug on a pole are illustrated below. In each case the pressure is applied to the plug from the top of the sleeve.