

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G73.157.2
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AT&T Co Standard

PRESSURE TESTING
RESIN PLUGS—LEAD CABLES
UP TO $\frac{5}{8}$ " DIAMETER

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1. GENERAL

1.01 This section, which replaces Section G73.157.1, Issue 1, covers the construction of cold resin plugs in the stubs of distribution terminals and in other small lead sheath cables up to 5/8-inch diameter.

1.02 This section was renumbered in connection with the preparation of several new sections to cover the construction of resin plugs in the full range of sizes and types of cable.

1.03 Before proceeding with the operations covered herein, the workman should be familiar with the precautions, preparation of materials and other general information on cold resin plugs in Section G73.157.1.

2. LOCATION OF PLUG

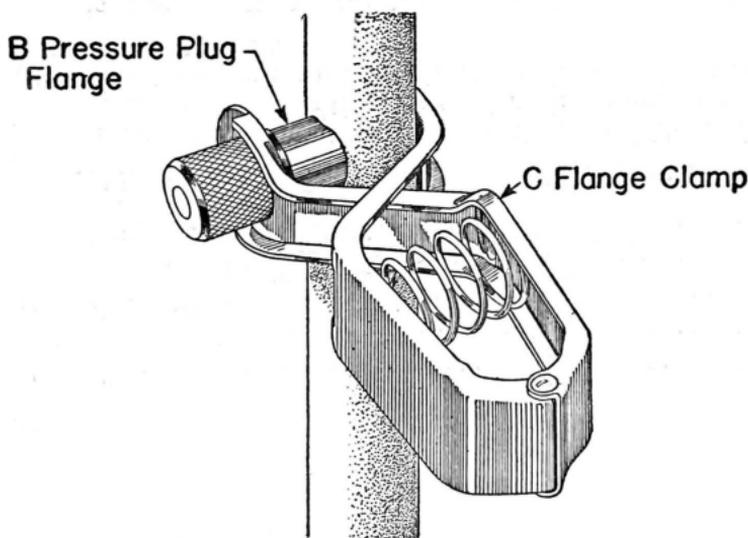
2.01 If the terminal stub is 8 inches or longer, the point at which the resin is admitted into the cable should be 4 to 6 inches from the terminal. If the terminal stub is less than 8 inches in length the admission point should be at the center of the stub.

2.02 In other small cables, it is advisable to make the plug 12 to 18 inches from the nearest splice if practicable.

3. INSTALLING FLANGE

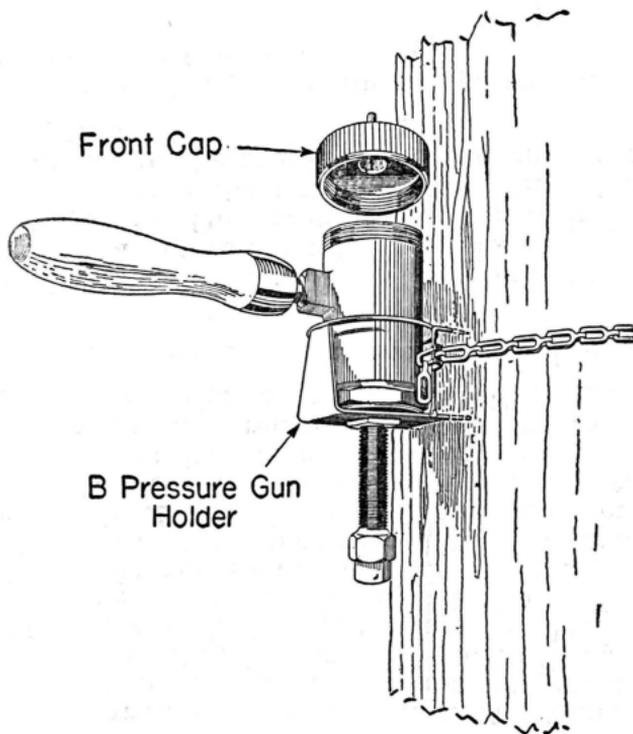
3.01 At the point where the resin is to be admitted, clean the sheath with the Carding Brush and coat the cleaned area with Stearine. Drill a hole in the sheath using the Cable Drill. Depress the core and slightly raise the sheath at the opening with the B Cable Core Depressor. Remove any burr from the inner surface of the sheath. Remove the core wrapping paper at the hole by making a series of closely spaced holes in the paper around the opening, then, with a pair of tweezers, remove the paper disc thus formed. Gently penetrate the core of the cable with the orangewood stick. In these operations, avoid damaging the insulation on the conductors.

3.02 Clean and Stearine a B Pressure Plug Flange, center it over the hole in the sheath and hold it in a place with the C Flange Clamp. Solder the flange to the sheath. Then remove the clamp.



4. INJECTING RESIN—TEMPERATURE ABOVE 45° F.

4.01 **Preparing Plugging Compound:** Attach the gun holder to the pole or other convenient support. Remove the front cap from the B gun, turn the piston screw until the piston is at the bottom of the barrel and then place the gun in the holder.



4.02 Using a pair of scissors or pliers, break the tip from a 50 gram tube of C Plug Resin, place the end in the barrel of the gun and expel the entire contents by flattening the entire length of the tube with the fingers, beginning at the folded end.

4.03 In a similar manner, place the contents of a 19 gram tube of C Resin Activator in the gun.

4.04 Stir the contents of the gun vigorously for one minute with the flat end of the B Cleaning Rod. Remove the rod and clean off the resin.

4.05 Replace the cap on the gun, remove the gun from the holder and, with the nozzle upward, expel the air in the gun by turning the piston screw clockwise until resin appears at the nozzle. Back off the piston screw enough to stop the flow and screw the nozzle into the flange on the cable.

4.06 **Inject the mixture** into the cable turning the screw clockwise in quarter to half turns. Maintain a firm pressure on the ratchet wrench. In some terminals, particularly pole mounted terminals, high back pressure in the cable will

be encountered. When high back pressure is encountered, wait a few seconds after each operation for the pressure to diminish. As the cable becomes filled and the back pressure increases, the length of turn should be decreased. When the ratchet handle remains tight, or practically so after two or three consecutive waiting periods, stop turning the screw but leave the gun attached to the flange for about one minute. Then disengage the gun and install the screw plug in the flange. If the stub is short, such as on an N type terminal, comparatively little back pressure will be encountered. In such cases, turn the screw by one-quarter to one-half turn until the last four threads on the piston screw remain visible. Then disengage the gun and install the screw plug to seal the flange.

5. INJECTING RESIN—TEMPERATURE BELOW 45° F.

5.01 When the temperature is 45° F. or less, and plugs are being made outdoors, the resin mixture and the cable should be heated to facilitate injection. When making several plugs in succession, it is advisable for the workman to keep one or two tubes of resin and activator in his pocket to prevent excessive chilling.

5.02 After the C Plug Resin and C Resin Activator have been placed in the gun, stir the material thoroughly for one minute with the flat end of the cleaning rod; then remove and clean the stirring rod. While the gun is still in the holder, play a moderately low acetylene torch flame on the gun at about the center of the barrel, working the flame around the barrel to avoid concentration of the heat. (**Do not heat the gun in a manhole.**) At the same time stir the plugging mixture continuously with a thermometer until the temperature of the resin reaches 75° to 80° F. Remove the flame but continue stirring the mixture with the thermometer. The temperature should rise to about 100° F. Should the temperature, through inadvertent overheating, reach a temperature of 110° F., or more, allow the material to cool to 100° F. before it is used.

5.03 Remove and clean the thermometer and place the front cap on the gun.

5.04 In plugging terminal stubs or small cables aerially, gently heat approximately 18 inches of the cable where the plug is to be built. On a stub of less than 18 inches, heat the entire stub, starting at the terminal. Heat the cable until it is warm but not hot to the touch. Avoid concentrating the flame on any one point.

5.05 Then attach the gun to the flange and inject the resin as outlined previously.