

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G73.105.2
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AT&TCo Standard

PRESSURE TESTING
FLANGES AND SCREW PLUGS
LEAD SHEATH AND SLEEVES

Contents	Page
1. General	1
2. Materials and Tools	1
3. Flanges	3
4. B Screw Plugs	5
5. Removal of Pressure Sealing Fittings	5

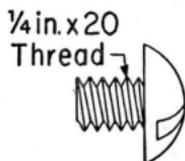
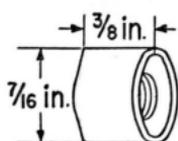
1. GENERAL

1.01 This section, which replaces Issue 1, has been re-written to cover the installation of flanges and screw plugs in lead sheath and sleeves. These items are used for venting or admitting gas to the cable, making pressure measurements, sealing holes made for flash testing, and for injecting materials in constructing pressure plugs. WR-G73.105.2 is cancelled.

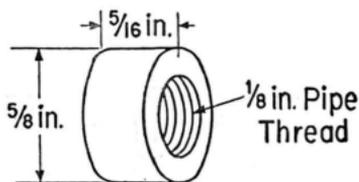
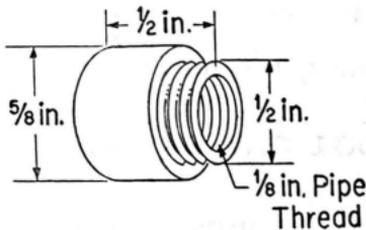
2. MATERIALS AND TOOLS

2.01 **Materials:** The following list of materials are used for the purposes indicated:

Flange, Plug, Pressure, B

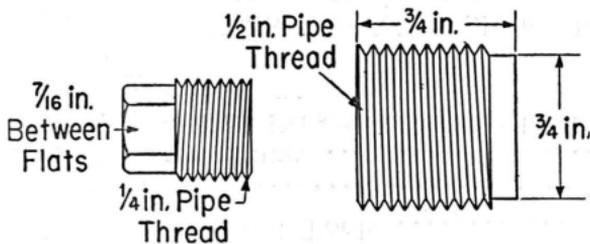


A tinned brass flange with machine screw plug. Available in packages of 50. Used on small diameter lead sheath cables for injecting resin to make a gas plug.

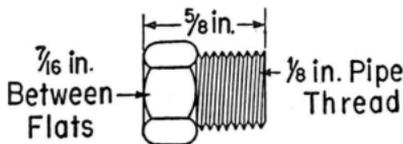
Flange, Pressure, C**Flange, Pressure, D**

A tinned bronze flange without plug, similar to former F flange. Furnished in packages of 25. Used to provide means of installing temporary valve in cable or sleeve for making pressure tests. Also used as a vent in making asphalt plugs.

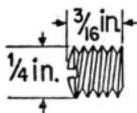
A tinned bronze flange without plug; base threaded to screw into sheath or sleeve to facilitate soldering. Furnished in packages of 25. Used primarily for injecting resin into cable in making gas plugs. Also recommended whenever sheath lifting operation is necessary on lead sheath cable over 1-inch diameter.

Flange, Testing, Pressure, L

A tinned bronze flange with screw plug. Furnished in packages of 6. Used on lead sleeves in making hot asphalt type gas plugs.

Plug, Flange, Pressure, C

A brass screw plug for sealing C, D, F, and similar flanges. Furnished in packages of 25.

Plug, Screw, B

A tinned brass screw used to seal 1/4" holes made in lead sheath or sleeves for testing purposes. Furnished in packages of 50. The Pressure Sealing Fitting formerly used for this purpose is no longer available.

3. FLANGES

3.01 **The B Pressure Plug Flange** has a curved base for use on small diameter cables and requires a 1/4-inch diameter hole drilled by the means of the standard Cable Drill or equivalent. The method of installation is described in the sections covering the construction of resin plugs.

3.02 **The C Pressure Flange** is used on lead sheath or sleeve and sealed by means of a C Pressure Flange Plug. The primary purpose is to serve as a convenient point for installing a temporary valve. The flange can be used to seal existing holes made for testing purposes or can be soldered in place before drilling a hole in the cable or sleeve, to avoid loss of gas in making measurements with the B or C Cable Drill.

3.03 If the sheath lifter is to be used after placing the flange, the D Pressure Flange should be used instead of the C flange, to provide greater strength.

3.04 The C flange is installed as follows:

(1) Clean the sheath or sleeve where the flange is to be placed and coat with stearine.

(2) When the flange is to be soldered to a relatively small diameter cable or sleeve, the sheath or sleeve may be flattened slightly to provide a closer fit and facilitate soldering.

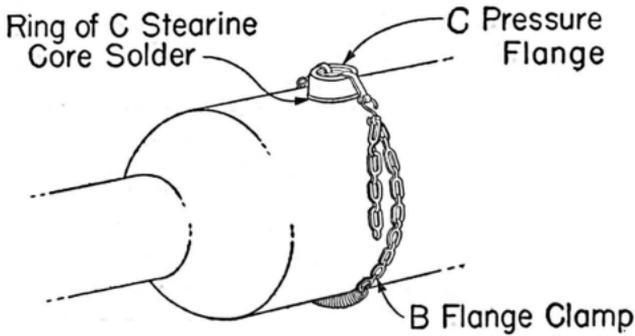
(3) If there is no hole in the sheath or sleeve, the flange should be soldered in position after which the hole can be drilled using a Cable Drill.

(4) Form a ring from a piece of C Stearine Core Solder 1-1/2 inches long.

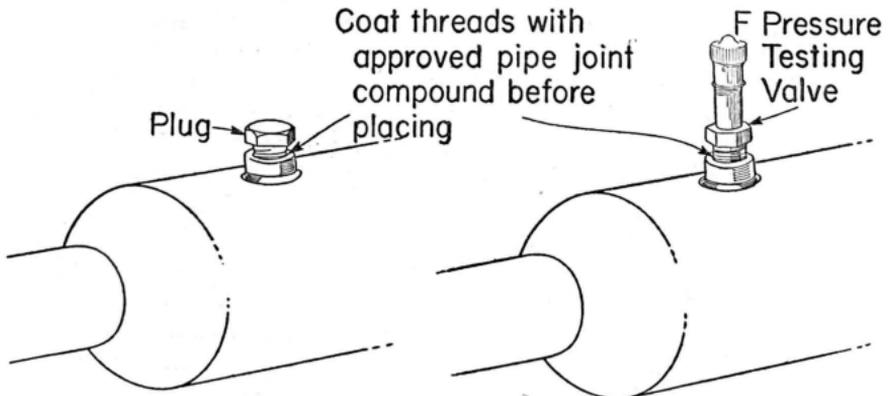
(5) Place the ring of solder on the sheath with the flange on top.

(6) To hold the flange in place, engage the flat hooks of the B Flange Clamp in the upper edge of the flange, as shown on the following page and adjust the length of the chain by engaging the appropriate links in the open S hooks. The spring should be centered to equalize the tension on the chains.

(7) If there is already a hole in the sheath or sleeve where the flange is placed, plug the hole with paper or muslin to prevent solder flowing into the hole during the soldering operation.



- (8) Apply a hot soldering copper to the top of the flange, or in soldering with a torch, play the flame on the flange until the solder flows and adheres evenly to the flange and sheath.
- (9) Drill a hole in the sheath and prepare the sheath as covered in the section on sheath preparation.
- (10) Where the flange is placed after the hole is made, be sure to remove the paper or muslin plug after the solder work is completed and make sure that the opening is clear for the free flow of gas.
- (11) Before placing either the C plug or F-type valve in the flange, coat the threads with the approved pipe joint compound to ensure a gastight seal.
- (12) The flange should be sealed by means of the C plug provided for the purpose. When it is necessary to apply gas or take pressure readings, this plug can be removed and an F pressure testing valve can be replaced in the flange. Before leaving the job, the plug should be replaced and tested to make sure that it is gastight.
- (13) The valve and plug can be placed and removed with a 7/16-inch open end wrench.



3.05 **The D Pressure Flange** is used primarily to facilitate placing and soldering on the front of a horizontal cable or on a vertical cable in constructing resin plugs, also to provide a more secure connection where the sheath lifter is to be used. This flange requires a 3/8-inch diameter hole in the sheath. Its use is therefore restricted to cables of 1 inch and larger diameter.

3.06 The method of installation is described in the sections covering the operations in which it is used.

3.07 **The C Pressure Flange Plug** is used for sealing C, D and F type flanges. The plugs must be ordered separately when needed as they are no longer furnished as a part of the flange.

3.08 **The L Pressure Testing Flange** is used exclusively in constructing hot asphalt plugs. Its installation is covered in the sections covering such operations.

4. B SCREW PLUGS

4.01 B screw plugs provide a convenient means of sealing 1/4-inch holes made with a Cable Drill for flash testing solder work on cables that are not maintained under pressure.

4.02 To install the plug, clean the sheath or sleeve around the hole where the plug is to be placed and coat with stearine. Install the plug with a screwdriver so that the top of the plug is flush with the surface of the sheath or sleeve. Place a soldering form around the plug and fill the form with solder, making sure that the sleeve is well tinned.

4.03 These plugs are not generally suitable for sealing holes in cables maintained under pressure due to the possibility of leaks during the soldering operation. A C or D flange should preferably be used on cables maintained under pressure.

5. REMOVAL OF PRESSURE SEALING FITTINGS

5.01 To remove a pressure sealing fitting for the installation of a pressure testing valve or clamp, score the portion of the fitting immediately above the hexagonal shoulder with a pair of side cutting pliers, and then break off the upper portion so as to allow the gas to escape through the fitting while the base is being unsoldered. After the base has been unsoldered, remove the fitting by unscrewing with a pair of pliers. Upon completion of the work, a B screw plug or a C flange can be installed to seal the hole.