

PLASTIC JOINT

Contents	Page
1. General	1
2. Tools and Materials	1
3. Precautions	1
4. Preparation of Cables and Lead Sleeve	1
5. Making the Seal	3

1. GENERAL

1.01 This section covers the operations required to seal a central office cable splice with Plastic Steel when lead sheathed stubs are involved. This method should not be used in manholes or on aerial plant.

1.02 This section has been reissued because of important changes in the precautions relating to the handling of Plastic Steel. Since the same precautions apply in the handling of cable plugging compounds, reference is made to Section 637-241-011 of the Pressure Testing practices for this information.

1.03 The seal at each end of a splice is made by injecting a premixed Plastic Steel (epoxy resin steel powder mixture) into the space between a lead disc and a temporary cap placed over the end of the lead sleeve. The cap consists of a piece of rubber sheet cut from a new splice cover and a piece of cloth cut from a new wiping cloth secured in place with a sealing clamp.

2. TOOLS AND MATERIALS

2.01 Following is a list of the special tools and materials involved in this work.

Tools

- | | |
|---------------|--|
| Calking Gun | Open frame type of calking gun suitable for handling disposable cartridges. Or, if necessary, a calking gun (purchase locally) suitable for handling bulk material can be used, in which case it may be necessary to modify the nozzle to fit a C pressure flange. |
| Cartridge | Disposable. |
| Mixing Paddle | Steel paint paddle (one quart size) or a one-inch wide steel bar 12 inches long. Obtain locally. |
| Drill | 21/64-inch diameter |

Materials

- | | |
|-----------------------|---|
| Plastic Steel, Type A | Available in one- or four-pound containers with a hardening agent in separate containers. |
|-----------------------|---|

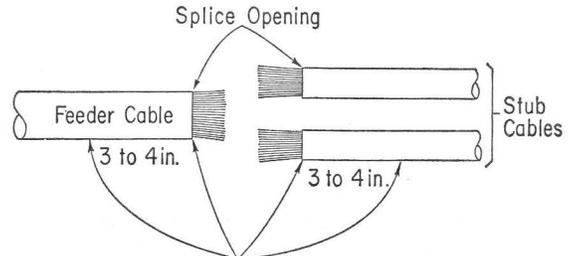
3. PRECAUTIONS

3.01 The materials in Plastic Steel include chemicals which can have irritating effects on the user. Care must be taken to keep the materials away from the eyes and to avoid inhaling the vapors any more than is necessary. Contact with the skin of some individuals may result in a skin reaction similar to that caused by creosote. The precautions to take when handling Plastic Steel are the same as those for Resin Compounds described in Section 637-241-011.

4. PREPARATION OF CABLES AND LEAD SLEEVE

4.01 Prepare the cables and lead sleeve as covered in the following steps.

STEP 1

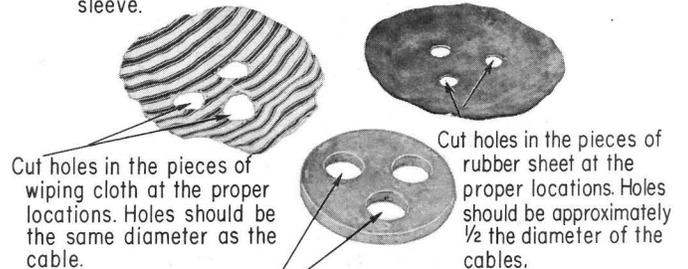


Using a carding brush, scuff each cable for a distance of 3 to 4 inches adjacent to the splice opening. Do not touch these areas after scuffing.

STEP 2

Open a new wiping cloth and cut two pieces of cloth (one for each end of the sleeve) 2 inches larger in diameter than the outside of the lead sleeve.

From a new rubber sheet, cut two pieces (one for each end of the sleeve) 2 inches larger in diameter than the outside of the lead sleeve.



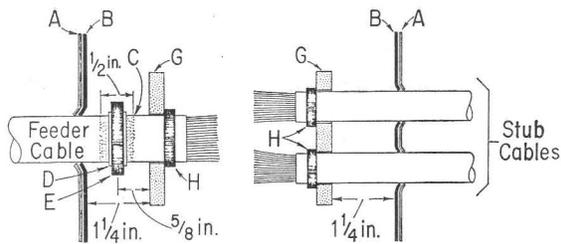
Cut holes in the pieces of wiping cloth at the proper locations. Holes should be the same diameter as the cable.

Cut holes in the pieces of rubber sheet at the proper locations. Holes should be approximately 1/2 the diameter of the cables.

Holes in discs should be of a size that will keep clearances between cables and discs to a minimum.

Prepare two (one for each end of the sleeve) closed hole discs approximately 3/8 inch thick. Diameter of discs should be large enough to keep clearances between outer edge of discs and inside of sleeve to a minimum. Use a carding brush and scuff the side of the discs that will be covered with Plastic Steel. Do not touch these areas after scuffing.

STEP 3

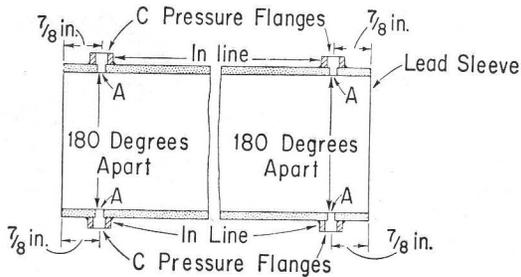


- A. Place pieces of wiping cloth over cables.
- B. Place pieces of rubber over cables.
- C. Paint scuffed sheath with C Cement in the 1/2 inch area shown.
- D. Place a single layer of B Sealing Tape (3/8 inch wide) over C Cement and overlap the ends 1/2 inch.
- E. Place 3 layers of D.R. Tape (1/4 inch wide) over the Sealing Tape.
- F. Paint Sealing Tape and D.R. Tape with C Cement.
- G. Place lead discs on cables. If the cables have a lead sheath, tack-solder (use rosin core solder) the discs to the sheath on the splice side. Remove rosin from soldering by scraping.
- H. Wrap a sufficient amount of B Paper Tape around cables to prevent Plastic Steel from flowing through between cables and discs. B Sealing Tape may be used if preferred.

Note 1-If the feeder cable has a lead sheath, the operations covered under C, D, E and F should be omitted.

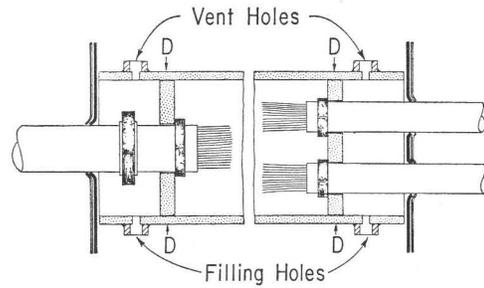
Note 2-After completing the foregoing operations, splice the conductors and then complete steps 4, 5 and 6.

STEP 4



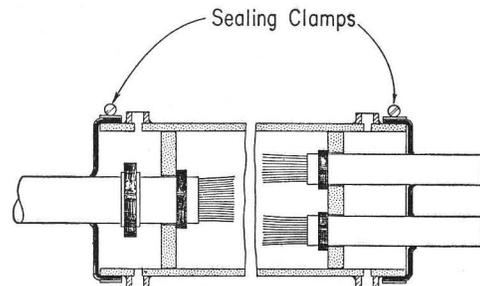
- A. Usually it is necessary to prepare a sleeve that is longer than normal.
- B. Solder C pressure flanges in place over holes. Use rosin core solder.
- C. Drill 2 1/64 in. holes at points marked "A".
- D. Scuff the inside surfaces for a distance of 2 inches from each end. Do not touch after scuffing.
- E. Split the sleeve 90 degrees from the pressure flanges.

STEP 5



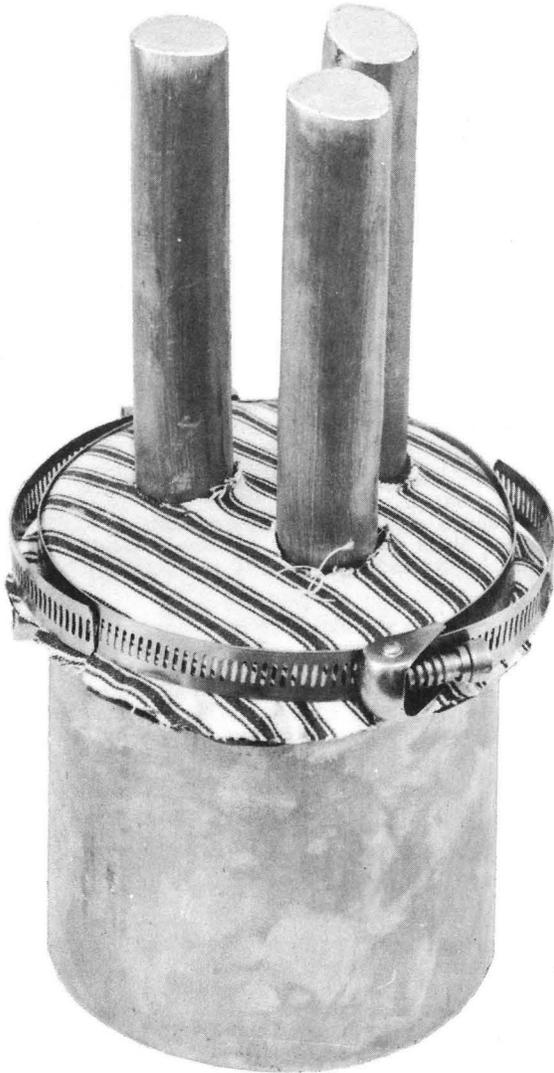
- A. Place sleeve on splice and solder the seam using stearine as a flux.
- B. After soldering, remove all traces of stearine from the areas that will be in contact with the Plastic Steel, by scratch brushing.
- C. Position the sleeve so that two of the flanges are at the top, to act as air vents. The other two will be at the bottom for use as filling holes.
- D. Make sure the discs are in their proper position.
- E. Locate the discs at each end of the sleeve by marking around the sleeve 1 1/2 inches from the end of the sleeve. Use a wooden cable dresser and beat down the sleeve along the marks until it rests against the discs.

STEP 6



- A. Fold pieces of cloth and rubber over ends of sleeve, pull them taut, and fasten with sealing clamps. It may be necessary to use two clamps connected together to reach around the sleeve.

4.02 After completing steps 1 through 6 the central office end of a splice will appear as illustrated below.



5. MAKING THE SEAL

5.01 Prepare the Plastic Steel by transferring the contents of the small can (hardening agent) to the large can. Mix the materials thoroughly at temperatures between 60 and 85 degrees (using a heat lamp if necessary) until free of lumps and there is no evidence of unmixed hardening agent. In transferring and mixing, care should be taken to scrape the materials from the walls of the can.

5.02 Fill the cartridge or calking gun with Plastic Steel. The mixing paddle is needed to accomplish the transfer of material from the large can to the cartridge or gun. Strike the edge of the cartridge or gun (nozzle end) vertically on a hard surface, during filling. This will assist in removing the air from the cartridge or gun and will force the Plastic Steel to the bottom. The mixed Plastic Steel should be used immediately.

5.03 Place the nozzle of the gun into one of the flanges at the bottom of the lead sleeve. Discharge the Plastic Steel into the space between the lead disc and cloth-rubber cap until a six-inch length of Plastic Steel overflows at the top vent flange. Gently knead the cloth at the ends of the sleeve to help force out any air bubbles. In some cases, more than one charge will be required to fill this space. There should be a minimum of delay between charges (less than 10 minutes).

5.04 Wipe off the excess material which has overflowed from the top vent and place a C pressure flange plug in the flange. Discharge additional Plastic Steel into the sleeve until there is considerable resistance to the flow of material. Remove calking gun and plug flange with a C pressure flange plug.

5.05 Seal the other end of the splice in a similar manner.

5.06 When possible do not move the completed splice. Where it is necessary to move the splice, the move should be completed within 30 minutes after injecting the Plastic Steel. After 30 minutes have elapsed the splice should not be moved for the next 12 hours. At temperatures below 60°F use a heat lamp, or a similar means of heating for a period of 2 hours to speed up the hardening process and insure a tight joint. Additional instructions are included in a special bulletin furnished with each package of Plastic Steel.

5.07 Do not place the splice under pressure for 12 hours after injecting the Plastic Steel.

5.08 After 12 hours, the pieces of cloth and rubber may be removed on any subsequent visit.

5.09 Following is an illustration of the plastic filled multiple joint.

