

PRESSURE TESTING
CONSTRUCTION TESTS
PROCEDURE DURING SPLICING

NOTES CONCERNING THIS ADDENDUM

This addendum is being reissued to include additional information relative to the flash testing of solder work in this area.

The following paragraphs should be marked "See Addendum" and treated as indicated:

Paragraph 1.03	- Added
Paragraph 2.02 and 2.04	- Supplemented
Paragraph 2.07	- Replaced
Paragraph 2.09 and 2.10	- Supplemented
Paragraph 2.12, 2.13, and 2.14	- Added

1. GENERAL

1.03 The references in Paragraphs of the Main Section to "F Flange" or "F Pressure Testing Flange" should be changed to read "C Flange" or "C Pressure Testing Flange."

2. FLASH TESTS OF SOLDER WORK

2.02 Each individual sleeve placed on underground cable and lead sleeves placed on aerial, house or block cable having a multiple joint of three or more cables shall be air tested as follows:

(a) Cable pasters shall be removed before flash tests are made.

(b) Cables should be placed in their permanent positions before flash tests are made. If this cannot be done, due to cable congestion, obstructions, etc., extra precaution should be exercised when moving the cables into place after flash testing in order that cracks and breaks do not develop.

(c) Flash tests should be made on existing cables that have been moved or re-racked during construction operations. If this is not possible due to space limitations, cable congestion, etc., extra precaution shall be exercised while moving such cables and during final inspection of cables, to insure against cracks or breaks at joints or in the cable sheaths.

Cables Under Continuous Pressure

2.04 Place the C flange and F valve on the lead sleeve 3 inches from the wiped joint. If there is a Y joint at one or both ends of the sleeve, place the flange at the end of the sleeve having the single cable or smaller group of cables as the case may be. Large underground splice cases are equipped with a pressure flange for flash testing and general pressure testing operations.

2.07 If any leaks are found, disconnect the gas, release the pressure built up in the cable and repair the leaks. Then repeat the flash test. After flash testing has been satisfactorily completed, remove the F Pressure Testing Valve and quickly replace it with a C Pressure Flange Plug, retaining as much of the air pressure in the sleeve as possible. Then test the plug and soldered flange to ensure that they are tight. The above instructions also apply when large mechanical splice cases are used.

Cables Not Under Continuous Pressure

2.09 Due to continued pressurization of exchange and trunk cables which may extend to all cables in this area, the main sleeve on underground cables should be prepared for flash testing as described in Paragraph 2.04 of this Addendum. Secondary underground sleeves and aerial sleeves may be prepared for flash testing as described in other paragraphs of this Section.

Flash Testing With the B Pressure Testing Pump

2.10 The B Pressure Testing Pump may be used for flash testing only on cables in the order of one-inch diameter or smaller where about 100 feet or more of the small cable intervenes between the sleeve being tested and any large cable to which the small cable under test is connected.

2.12 The pump is equipped with a check valve and gauge that will indicate the back pressure in the cable when pumping ceases. In making a test, pumping should be continued until the back pressure is sufficient for the test in progress. The flash testing procedure can then be continued as outlined in Paragraph 2.05 and 2.06 of Section G73.225.3.

2.13 Nail-Hole Method of Flash Testing:

The following procedure may be used only when the air test hole is to be introduced into a single-wall thickness lead sleeve used on aerial cable or other than the main sleeve on underground cable. It should not be used where it is necessary to make the test hole in cable sheath or double-wall lead sleeves.

- (a) Make a hole in the lead sleeve 3 inched from the wiped joint by means of a small hammer and a common nail approximately $3/32$ inches in diameter. The hole should be made at an angle of 45° to the sleeving, toward the joint, and at right angles to the craftsman's line of sight. Care must be exercised to prevent contact between the point of the nail and the splice wires inside the sleeve. When a splice consists of a Y joint and straight joint, make the hole in the straight joint end of the lead sleeve. Install a pressure testing clamp over the hole.
- (b) Admit gas for two minutes at a regulator pressure of 20 pounds per square inch. When flash testing splices in which contactors or contactor-terminals are terminated, the regulator pressure should not exceed 12 pounds per square inch. With the gas cylinder still connected and gas entering the sleeve, apply the proper solution for lead or alpeh cable and carefully examine the sleeve and sheath starting at the sleeve and continuing along the sheath on each side as far as can be reached conveniently. In manholes the sheath should be tested to the duct entrance in each direction. Use a splicer's mirror if necessary to examine the back of the sleeve and sheath.
- (c) When the inspection is completed, shut off the gas. Observe the back pressure as indicated by the low pressure gauge of the regulator immediately after the regulator adjusting screw begins to turn freely in its socket. The back pressure should not be less than 7 pounds per square inch at regular splice points nor 5 pounds per square inch at splices in which contactor-terminals or contactors are terminated. If the back pressure is less than 7 or 5 pounds at these respective splices, reapply gas at the regulator pressure given in (b) above in an attempt to secure the desired back pressure. At this point reinspect the sleeve and sheath.
- (d) If any gas leaks are found, repair them and repeat the flash test. When tests are completed, seal the hole in the sleeve in the following manner:

(1) As soon as the soaping operations are completed, and with proper back pressure still maintained, remove the pressure testing clamp and immediately tap the hole closed by using the wedge end of a riveting hammer. Test the closure with soap, eliminating any small leaks by using the wedge end of hammer.

(2) After the hole is completely closed, clean the area approximately one inch around the closure and apply stearine. Cut a 1/2 to 3/4 inch round or square hole in a 2 inch square of cable paster and center it over the cleaned area.

(3) Tin the exposed area and float a smooth solder patch over the tinned area. Remove the paster and soap the solder patch to test the tightness of the solder seal.

2.14 Ordinarily, the regulator back pressure (which is approximately the same as the pressure in the cable) will be greater than seven pounds at the end of a test. If the sleeve is within a few hundred feet of an open splice or central office, however, it may not be possible to secure the desired back pressure. In such cases it will be necessary to make the test with a lower back pressure, although the test will not be as effective.