

## SEALING DUCTS

### GENERAL REQUIREMENTS

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(e) Prevent the silting of ducts.

**1.05** There are two general categories of duct seals, "*Mandatory*" and "*Optional*". Mandatory seals are used where the duct is required to remain tight against the entrance or escape of gas or liquid. Optional seals are those recommended primarily to prevent the entrance of fluids and debris from washing into the ducts from the manhole.

#### 1. GENERAL

**1.01** This section outlines the general sealing requirements for ducts terminated in manholes, cable vaults, buildings, boxes, at poles, etc.

**1.02** This section is reissued to differentiate between mandatory and optional sealing requirements and to include reference to the 4-inch Universal Plug. Since this is a general revision, arrows ordinarily used to indicate changes have been omitted.

**1.03** The material used to seal ducts are as follows:

- Rubber Conduit Plugs, Section 628-220-201
- Waterplug and B Duct Sealer, Section 628-220-204
- Plastic Conduit Plugs, Section 628-220-205

**1.04** The terminated ducts should be sealed to:

- (a) Reduce pumping time during the rodding, cable placing, and cable splicing operations.
- (b) Reduce the danger of contamination from gasoline, oil, sewer waste, etc.
- (c) Help eliminate the icing of streets with water pumped from the manhole during freezing weather.
- (d) Eliminate the danger of explosion from the flow of gas through the conduit system.

\*\*Reprinted to comply with modified final judgment.

#### 2. MANDATORY DUCT SEALS

**2.01** Mandatory duct seals are made with rubber conduit plugs, Waterplug, or B Duct Sealer depending upon existing conditions. Rubber conduit plugs are the preferred choice. Waterplug or B Duct Sealer are advantageous where chipped or broken conduit is encountered or where necessary to plug an occupied duct in a "hard to reach" location. Waterplug or B Duct Sealer must also be used where the duct is less than 3 inches or greater than 4-1/2 inches.

**2.02** Mandatory duct seals are required:

(1) In all ducts at the entrance to central offices or other buildings. In addition, where no gas vent is provided at the central office end of the conduit, all ducts entering the manhole from the central office should be plugged. Dowel pin holes, cracked conduit walls, etc, at the vault or building entrance should be plugged or repaired with Waterplug.

(2) At *each* end of conduit extending between telephone manholes and traffic control, fire alarm, or police call boxes or control boxes operated by other companies.

*Note:* Where the alarm or control box end of the duct is not under administration of the Telephone Company, refer the duct sealing to the controlling company through Telephone Company administration channels.

(3) At each end of a submarine pipe crossing.

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- (4) In conduit or sleeves between the cable vault and upper floors.
- (5) At the pole or building end of ducts extending from a manhole to a pole or outside building wall.
- (6) At each end of a duct extending between two poles or between a pole and building, whether terminated inside or outside of the building.
- (7) At buried cable entrance to buildings.
- (8) At specified manholes to exclude water or gas from entering or as a means of avoiding excessive manhole pumping.

**2.03** When it is necessary to remove a mandatory plug, for example, when removing a solid rubber conduit plug from a vacant duct preparatory to cable placing, make certain to retest the manhole atmosphere as required by Section 620-140-501 and to reseal the duct as soon as the cable has been placed.

**2.04** On completion of other work at cable vault or building entrances, check for leakage and replace or readjust any leaking seals, cracks, etc.

### 3. OPTIONAL DUCT SEALS

**3.01** Optional duct seals are made with the 4-inch Universal Plug in 4-inch round bore conduit.

Similar commercially available "top hat" type plastic plugs can be used with 3-1/2 inch round bore conduit. Where it is desired to provide optional seals in squarebore conduit, rubber conduit plugs, Waterplug, or B Duct Sealer should be used.

**3.02** Optional duct plugging of all round bore conduit of the plastic, fiber, or fiber-cement types with 4-inch Universal Plugs is particularly recommended at the time of termination in the manholes. These plugs primarily serve to prevent the entrance of fluids and debris from washing into the ducts from the manhole and will tend to provide clean ducts for ultimate cable placing.

**3.03** While these plugs are not designed to withstand any significant head of water which might develop within the conduit structure, (as a result of conduit breakage or leakage at joints) they do offer some resistance and may be used advantageously with multiple concrete conduit to serve the dual purpose of keeping the ducts clean while keeping low head pressure water in the ducts from flowing into the manhole.

**3.04** Where Optional Plugs are removed from concrete conduit in connection with duct rodding and cable placing operations, the ducts should be resealed with split rubber conduit plugs after the cable has been placed.