

INSPECTING AND TESTING GAS PIPING

1. GENERAL

1.01 This section outlines the methods and procedures for inspecting and testing of all piping used for the distribution of natural and manufactured gas in all owned and leased telephone buildings. This section also applies to all buildings using bottled gas.

1.02 Every employee should be mindful at all times of the potential hazards that accompany gas leaks. Any odor of gas must be reported at once. All leaks, however small, are to be repaired immediately. It is important that the local gas company be notified at once.

1.03 Particular care should be exercised by employees having occasion to enter unattended buildings, as for example Community Dial Offices, located in gas service areas.

1.04 If escaped gas is detected anywhere within a building, the area in which the odor of gas is detected should be thoroughly ventilated by opening windows, exterior doors or other means at once. DO NOT USE electric ventilating fans. Continue ventilation until the source of the leak is located and repaired. During this period, do not turn on or off any electric lights or apparatus. If illumination is required, use a flashlight which has been switched on while in a safe area.

1.05 In any area where there may be escaped gas, DO NOT SMOKE or use any OPEN FLAME.

1.06 It is recommended that where practicable the gas service should enter the building above ground level. Service entrances supplying manufactured gas, in locations where there is a possibility of freezing, should be laid below the frost line.

1.07 The inspection and tests outlined herein shall be made only by experienced (licensed) workmen. The local gas company or qualified plumbing contractors may be employed to do the work.

1.08 Because of the corrosive action of cinders, gas pipe should never be laid in such a fill. Consideration should be given to the removal of all gas piping, either inside or outside of a building, where presently laid in a cinder fill.

1.09 Initial tests of gas piping in new buildings or major additions will be made by the contractor under the supervision of the Engineering Department.

1.10 It is recommended that the inspection and testing procedures described in this section be scheduled at least once each year.

1.11 When any piping, meters or other units are dismantled from a gas piping system they should be removed from the building at once.

2. INSPECTION

2.01 All exposed gas piping shall be inspected to see that it is in good condition with particular attention to supports, joints, corrosion, foreign loads and strain.

2.02 The gas service entrance shall be inspected to assure that the seal around the pipe where it enters the building is tight. The basement walls near the gas service entrance should be checked for cracks or openings which would permit the seepage of gas into the building.

3. TESTING PRECAUTIONS

3.01 The locations in a building where the gas pipe testing is to be conducted should be properly ventilated so as to eliminate all potential hazards. Every precaution shall be taken so that no escaping gas enters a central ventilating system.

4. TESTING GAS SERVICE ENTRANCE

4.01 A gas indicator, Fig. 1, (Mine Safety Appliances Company's Explosimeter - Model 2) or its equivalent is used for detecting combustible gases such as natural gas, manufactured gas, gasoline vapors, etc. in utility service entrances, curb boxes or other confined spaces.

4.02 Ordering information for gas indicator.

For complete unit:

(Quantity) - Indicator, Gas, Explosimeter, Model 2 with 15' of hose and DN48940 carrying case.

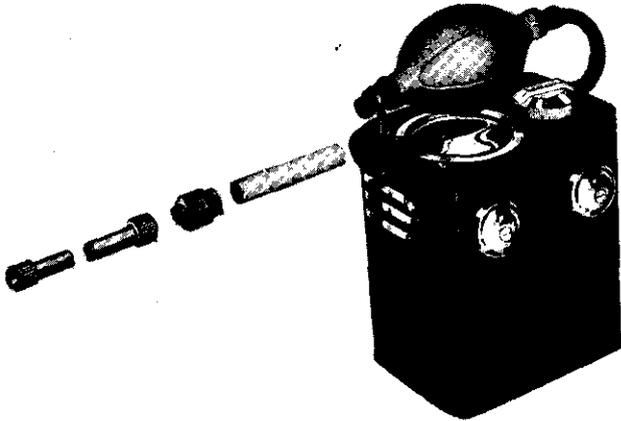


Fig. 1 - Explosimeter

4.03 The proper procedure for conducting this test is as follows:

- (a) At the curb box valve, remove cover plate and lower sampling hose into the curb box. Operate instrument as outlined in manufacturers' instructions.
- (b) Inside the building the "Explosimeter" should be used in testing for gas mixtures at the gas service entrance and where all underground utilities including telephone cable ducts enter the building.

4.04 If gas is found at any of the above locations, the matter should be reported to the local gas company at once.

#### 5. TESTING GAS LINES WITHIN BUILDING

5.01 The procedure to be followed in testing all interior gas piping is as follows:

- (a) Shut off pilot burners on all lights and appliances.
- (b) Shut off main gas valves to the heating boiler, hot water heater, and to any other gas fired equipment.
- (c) Shut-off valve to gas engine.
- (d) The emergency curb valve and the building main shut-off valve remain in the open position.

5.02 With the valve settings as indicated above, watch the test hand on the gas meter for any flow of gas. One revolution of the test hand of the gas meter usually registers

a flow of 1/2 to 1 cubic foot of gas. Therefore an extremely small flow of gas can be readily detected.

5.03 Observe the position of the test hand of the meter for 10 minutes. Any movement of the test hand indicates a leak which must be located and repaired.

#### 6. REPAIRS

6.01 Leaks should be repaired immediately whether disclosed by test or when noticed at other times.

6.02 When the leak occurs in concealed piping, shut off the system at the meter.

6.03 If it appears that extensive repairs or rearrangements are necessary to eliminate a leak in concealed piping, the proper authority should be consulted as to the corrective measures to be taken.

6.04 A simple and reliable method for locating leaks in exposed piping is by the application of a soap solution on pipes and fittings. A leak is located wherever the escaping gas forms bubbles in the applied soap solution. The recommended solution for testing is ordered as (Quantity) can, Solution, Testing pressure, B, 1 quart.

#### 7. RESTORING SYSTEM TO SERVICE

7.01 Following repairs repeat the appropriate tests to make sure repairs have been made satisfactorily.

7.02 Restore system to service in this order:

- (a) Open main shut-off valve at the meter.
- (b) With normal gas pressure in the piping, test all valves and connections that have been opened and closed with the soap solution referred to in Paragraph 6.04.
- (c) Bleed the gas at various appliances at the far end of the system until there is no interruption to the flame because of entrapped air in the piping.
- (d) Light and adjust pilot burners on equipment or appliances so equipped.
- (e) Whether heat is required or not light the gas fired heating plant in accordance with instructions applying thereto. Do the same for the hot water heater and other automatically controlled gas fired equipment. This equipment need be operated only long enough to insure that it is functioning properly.

8. UNUSED PIPING

8.01 Gas piping no longer required to serve outlets or appliances, should wherever practicable, be disconnected and removed. Idle branches should be disconnected at the main line. Carefully cap all openings.

9. CERTIFICATE

9.01 When each test is completed, the inspection certificate Form E-3900 shall be signed and dated by the inspector.

9.02 The certificate shall be framed and mounted in a readily visible location, preferably in the vicinity of the gas meter.

9.03 Exhibit A is an illustration of the inspection certificate.

