

Conduit (G) is of cast-iron construction, assembled with lead joints and is water-tight, if properly laid. It is obviously expensive and is justified only in exceptional cases.

Since it is difficult to make a concrete or masonry conduit absolutely water-tight, provision should be made for some seepage. The pipe should

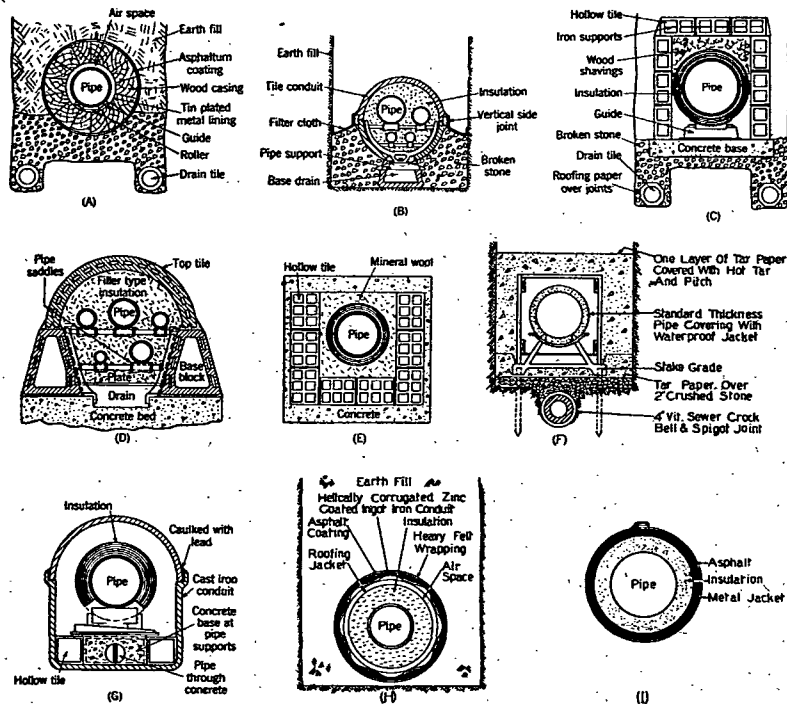


FIG. 1. CONSTRUCTION DETAILS OF CONDUITS COMMONLY USED

be protected by a waterproof jacket over the insulation and the seepage drained from the inside of the conduit.

Underdrainage of the conduit is generally provided for by a tile drain laid in crushed stone or gravel underneath the conduit. The tile underdrain should be carried to the sewer or some other drainage point.

Manholes are required at intervals for access to valves, traps, and some types of expansion joints.

Expansion of the piping must be carefully controlled by means of anchors and expansion joints or bends. Anchors can be anchor fittings or U-shaped steel straps which partially encircle the pipe and are firmly bolted to a short length of structural or cast steel set in concrete. In general, cast steel is preferable to structural steel.

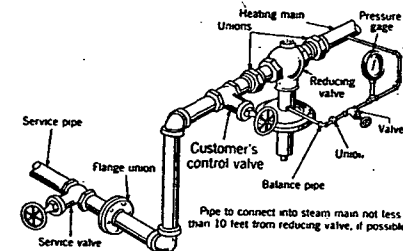


FIG. 2. CONNECTIONS FOR REDUCING VALVE WITHOUT BYPASS

Where steam and return piping are installed in the same conduit, the return piping usually follows the same grade as the steam piping. In general, the condensation is pumped back under pressure.

PIPE TUNNELS

Where steam heating lines are installed in tunnels large enough to provide walking space, the pipes are supported by means of hangers or roller frames on brackets or frame racks at the side or sides of the tunnel. The pipes are insulated with sectional pipe insulation over which is placed a sewed-on, painted canvas jacket or a jacket of asphalt-saturated asbestos water-proofing felt. The tunnel itself is usually built of concrete or brick and water-proofed on the outside with membrane water-proofing.

On account of their relatively high first cost as compared with smaller conduits, walking tunnels are sometimes not installed where provision for the heating lines is the only consideration, but only where they are required to accommodate miscellaneous other services or provide underground passage between buildings.

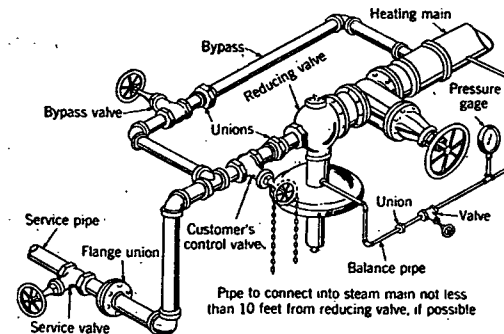


FIG. 3. CONNECTIONS FOR REDUCING VALVE WITH BYPASS