Mechanical Drawing II

Code: MAE227

Pipe Joints

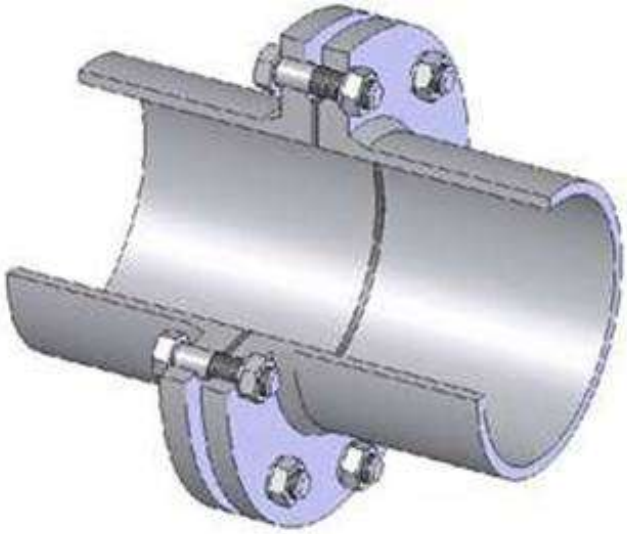
Pipe Joints:

Pipes are made of cast iron, steel, wrought iron, brass, copper or lead.
They are used for carrying fluids (water, steam, gas, oil etc. from one place to another.

Various forms of joints are used for connecting them, depending upon the material of the pipes and the purpose for which they are used.

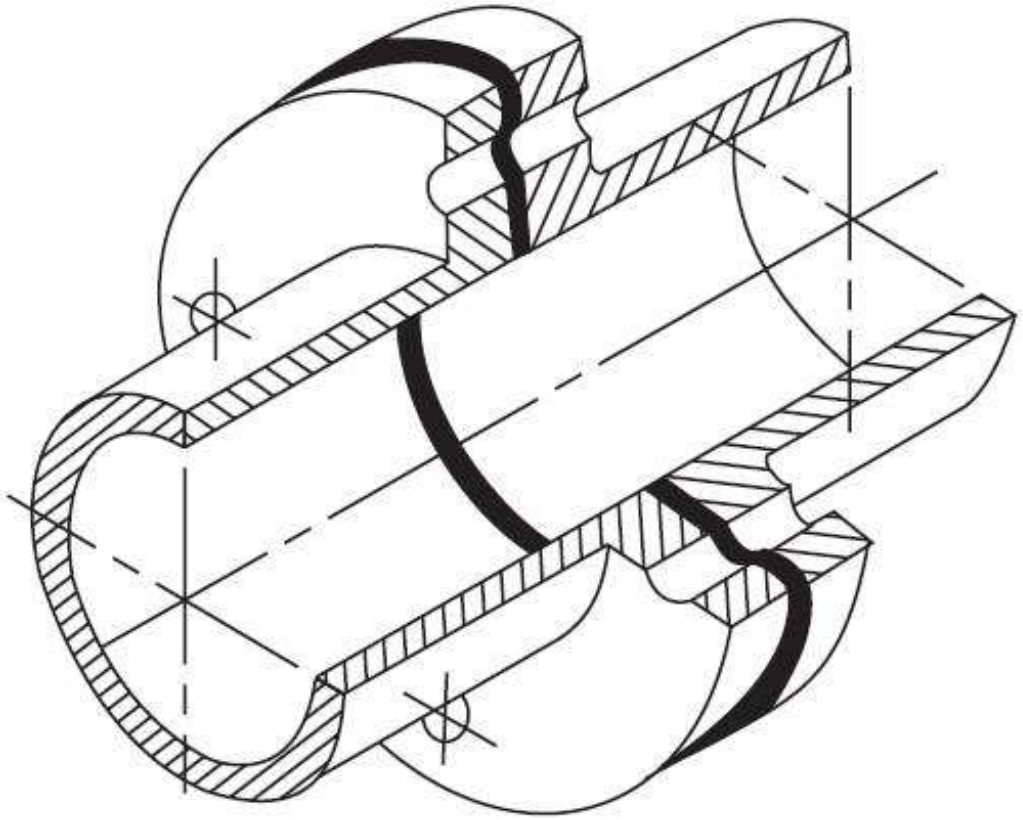
Cast Iron Flanged Joints:

Flanges are cast at the ends, integral with the pipes. Their faces are machined at right angles to the axis of the pipes so that, when joined together, the pipes are in perfect alignment.



A packing-ring or gasket of soft material such as India-rubber, canvass etc. coated with red lead, is placed between the faces of the two flanges which are joined together by means of bolts.

Cast Iron Flanged Joints:



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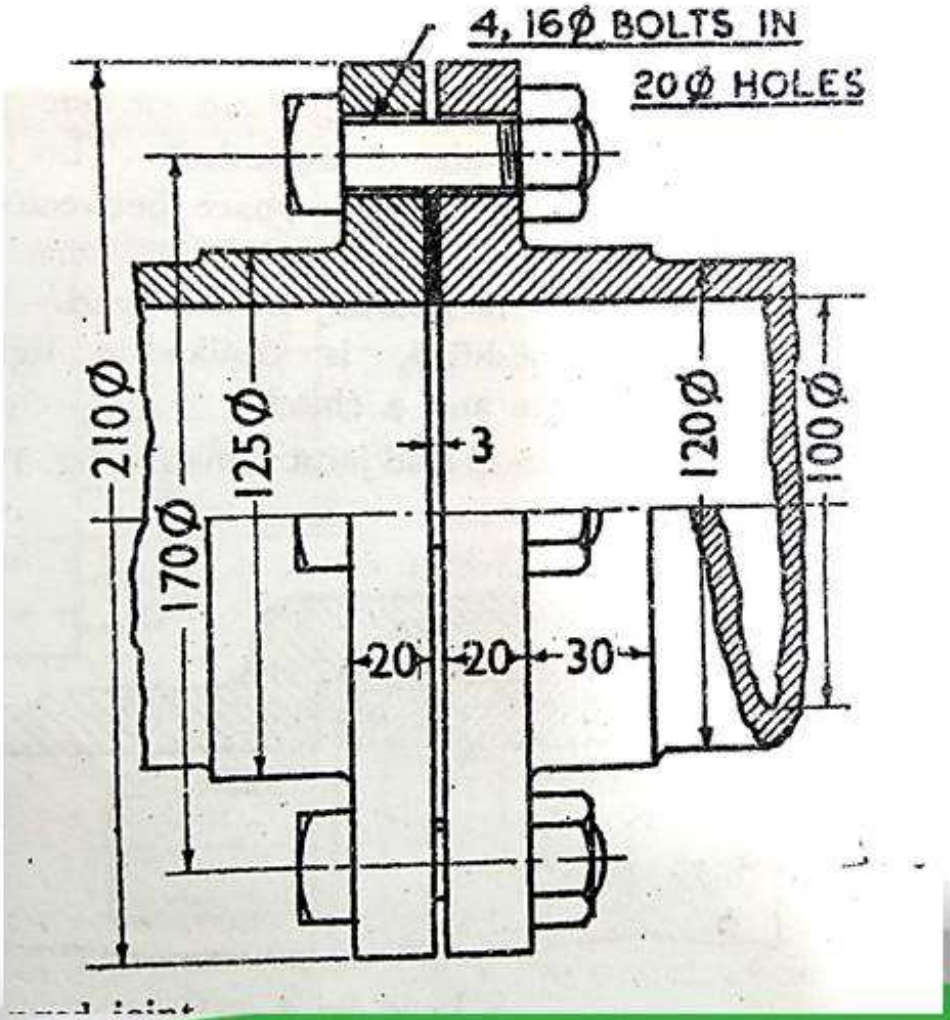
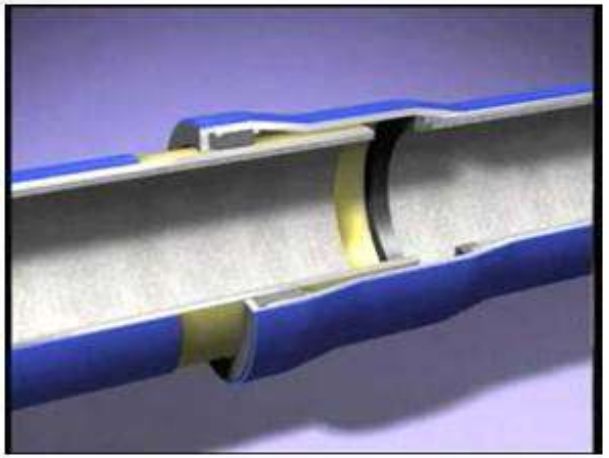
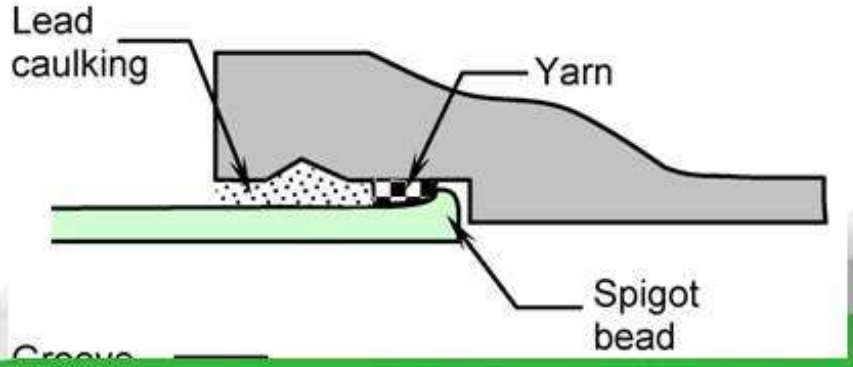


Socket and spigot joint:



Cast-iron pipes which are to be embedded in the ground are usually connected by this joint. The joint being slightly flexible, adapts itself to small changes in level due to settlement of earth.

The spigot-end of one pipe enters the socket-end of the other. The joint is made by filling up the space between the two, partly by several turns of jute yarn and the remaining by pouring molten lead.
The lead when solidified, is caulked-in tightly with a hammer and a chisel.



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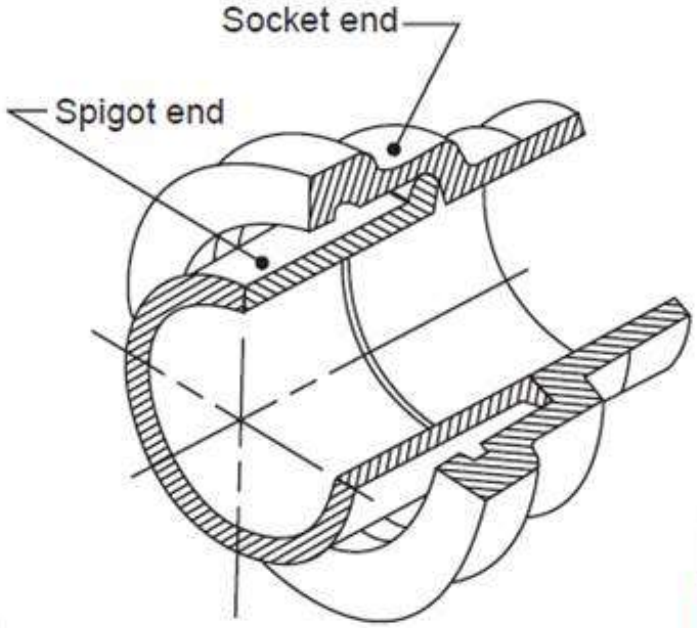
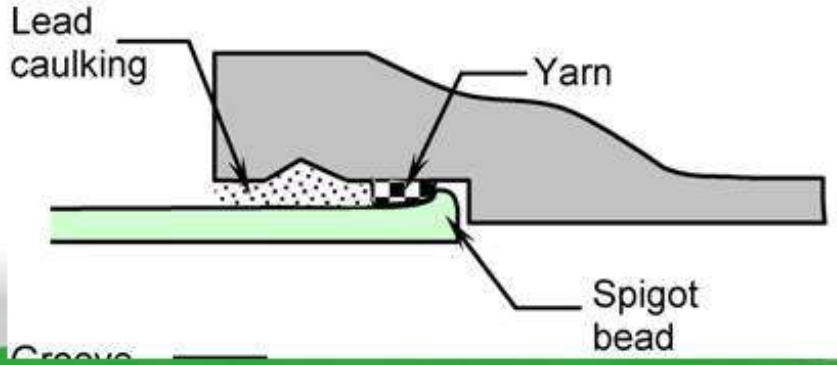


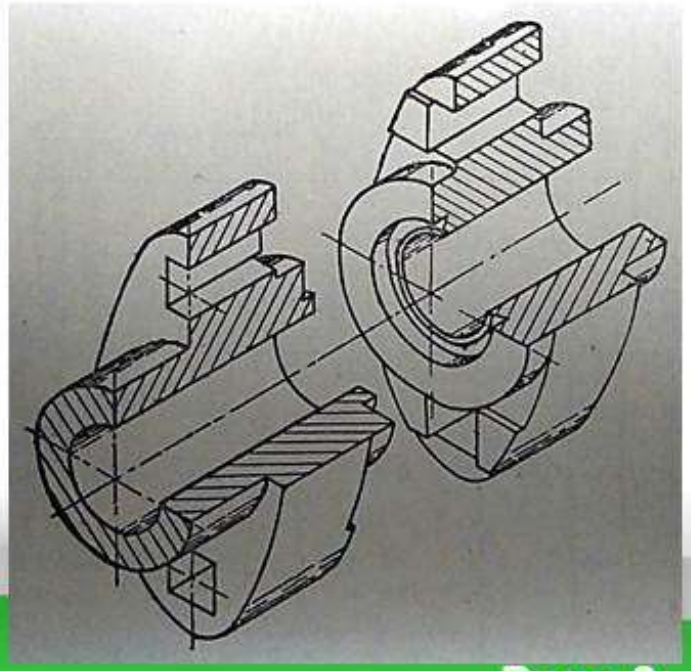


Hydraulic joint:

This form of joint is used where fluids under high pressures varying from 60 kg to 90 kg per sq. cm are to be transmitted.

The flanges (of pipes) are cast, generally oval in shape. A small circular spigot, provided in the centre of one flange, enters and fits in an accurately machined socket (having a recess) in the other flange.

The joint is made with a V-shaped gutta-percha ring inserted inside the recess. The flanges are connected together by two large-size bolts.



Wrought-iron and steel pipes:

Wrought-iron pipes are generally butt-welded and are made in comparatively smaller sizes, from 12mm to 100mm internal diameters.

These pipes are mainly used for domestic purposes and are usually . galvanized all over.

Wrought-iron and steel pipes:

These pipes are joined, with their axes in alignment, by means of a socket or a coupler.

The socket is threaded on the inside and screwed-on half-way on the threaded end of one pipe. The end of the other pipe is then screwed into the socket in the remaining half.

To prevent leakage through the joint, a few standard of jute or hemp coated with red lead are wound round the bottom of the threaded on each pipe end.

Wrought-iron and steel pipes:

Nipple: is threaded on the outside, is also sometimes used. It is screwed inside the internally threaded ends of the two pipes.
In this case, the passage of the fluid is partially choked on account of the smaller inside diameter of the nipple.

Pipes of different diameters are joined by the use of **reducing socket**.

A pipe can be closed at the end with a **plug**