Damp Proofing Material

1- Flexible Materials:

The materials, which do not crack and deform their shape when subjected to loading, are called Flexible Materials

   a- Bitumen Mastic (Mastic Asphalt)
      ➢ It consists of asphalt or bitumen mixed with fine sand in hot state to form an impervious mass.
      ➢ Due to this consistency it can be spread (when hot) to a depth of 2.5cm to 5cm, which sets on cooling.
      ➢ It provides good impervious layer but special care is needed in its laying.

   b- Bitumen Felts (Sheets):
      ➢ It consists of 6mm thick sheet of bitumen prepared in rolls having width equal to that of brick wall.

   c- Hot laid Bitumen:
      ➢ This material is used on a bedding of cement concrete or mortar.
      ➢ This should be applied in two layers at the rate of 1.75kg/m² of the area.

   d- Metal Sheets:
      ➢ Metal sheets of Copper, Aluminum, or Lead are used to prevent dampness, but they are costly.
      ➢ Sheets of these materials are used through out the thickness of the wall.
      ➢ The sheets of Lead are laid over Lime Mortar and not with Cement Mortar due to the chemical reaction of Cement over the Lead.
      ➢ The sheets of metal should be coated with asphalt.
      ➢ The thickness of the sheets should not be less than 3mm.

2- Rigid Materials:

   a- Rich Concrete
      ➢ 1.2cm to 4cm thick layer of Rich Concrete (1:2:4) painted with two coats of hot bitumen is used as horizontal D.P.C.
      ➢ It also prevents the moisture penetration by capillary action.
      ➢ These layers are laid where the damp is not excessive.

   b- Mortar:
      ➢ 2cm thick layer of Rich Cement and Sand Mortar (1:3) is applied on the inner face of external wall.
      ➢ This is a vertical D.P.C.
      ➢ The surface is than painted with two coats of hot bitumen.
c- Bricks:
- Over burnt or dense bricks in one or two layers can be used as cheap and effective DPC.
- They are laid in Rich Cement and Sand Mortar (1:3)
- Bricks are rarely used as DPC except in cheap houses.

d- Stones or Slates:
- Two layers of stone slabs or slates laid in Lime, Cement and Sand Mortar (1:1:6) make a best DPC.
- They can also be laid in Cement Sand Mortar.
- It is used where a good quality of stone is easily and cheaply available