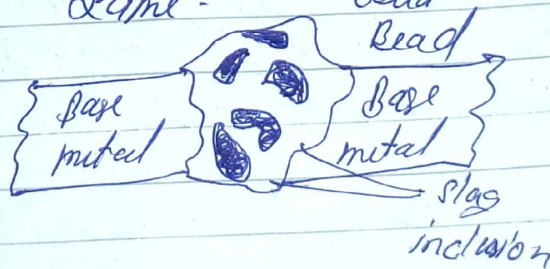


Arc  $\Rightarrow$  Various Defects  $\Rightarrow$   
① Incomplete Penetration - Incomplete

Penetration of the welding joint occurs when the depth is insufficient.

Penetration is defined as the distance from base plate's top surface to the maximum extend of the weld nugget.

② Inclusion  $\Rightarrow$  Inclusion may be in the form of slag or any other foreign material which does not get a chance to float on the surface of the solidifying weld metal and thus gets entrapped inside the same.



③ Porosity and Blowholes - Porosity is

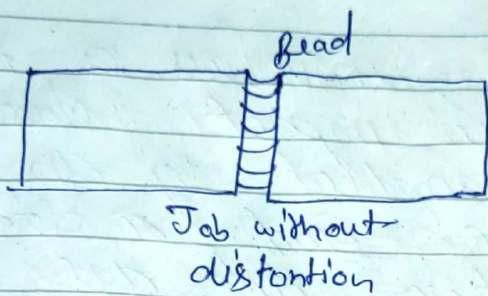
a group of small voids and blowholes are comparatively bigger isolated holes or cavities.

④ Spatter  $\Rightarrow$  Spatters are the small metal particles which are thrown out of the arc.



during welding and get deposited on the base metal around the weld bead along its length

⑤ ~~Distno~~ Distortion - Distortion is the change in shape and difference between the position of the two plates before and after welding due to the temperature gradient present at various points along the joint



### Cause of Distortions =>

- ① more number of passes with small diameter electrodes
- ② low arc travel speed
- ③ High Residual stresses in plates to be welded
- ④ Using improper welding sequence -