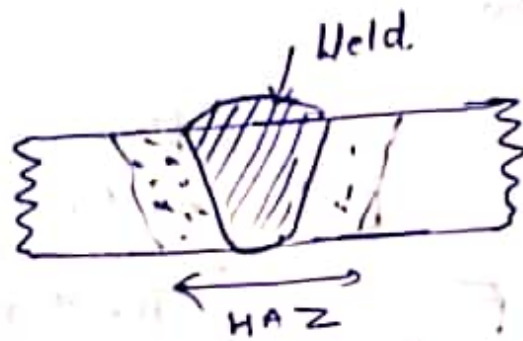


HAZ - Heat Affected Zone, is adjacent to Weld metal zone that did not melt during welding but heated to high enough temp. for sufficient time due to which mechanical properties & microstructural have been changed.



### Residual stress in welding:

- The differential heating of the plates by the weld heat source
- The non-uniform plastic deformation.
- The cooling rate that accompanies welding process.

- Types -
- ① Mechanical Residual stresses.
  - ② Metallurgical Residual stresses.
  - ③ Reaction stresses.

Hard feeling - It as an provide a resist another force or they have no surface damage because they surface are resist to other any quench or force etc External.