

WELDING DEFECTS

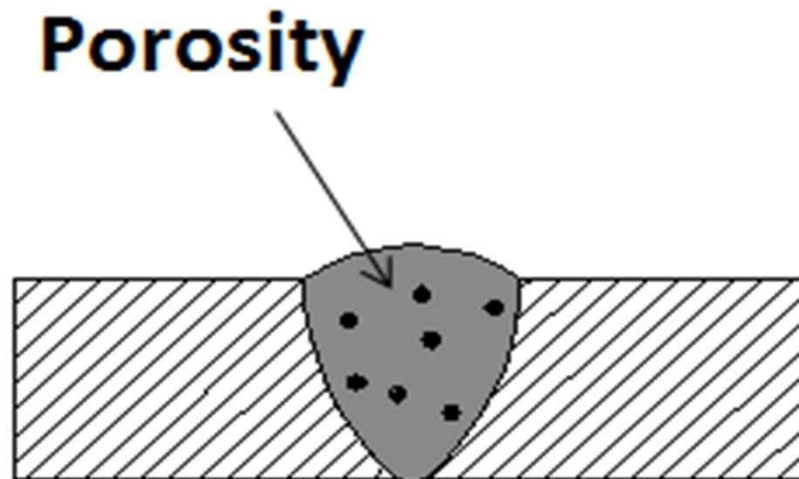
Welding defects are generated in a welding job due to the faulty or poor technique used by the inexperienced or unskilled welder or due to fundamental difficulties in the welding operation.

Types of defects

1. Porosity
2. Crack
3. Incomplete penetration
4. Incomplete fusion
5. Slag inclusion
6. Undercut
7. Spatter

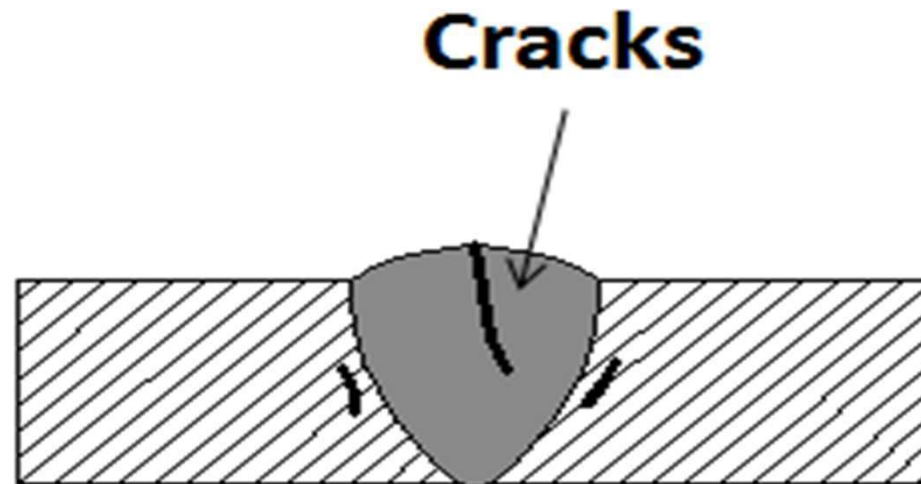
Porosity

It is a group of small holes throughout the weld metal. Porosity is the condition in which the gas or small bubbles get trapped in the welded zone.



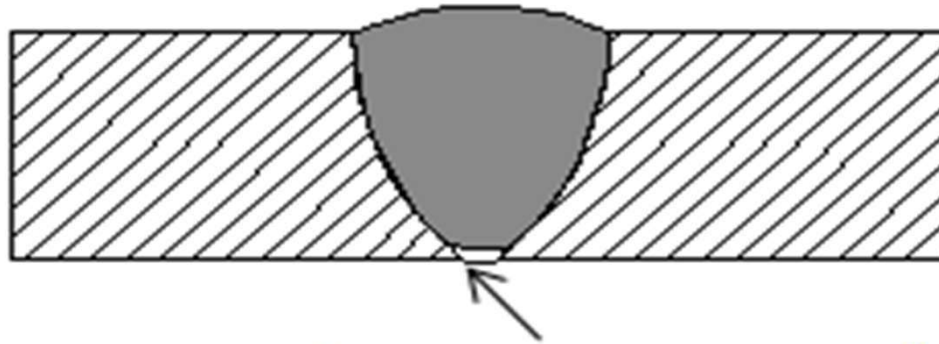
Cracking

It is the formation of cracks either in the weld metal or in the parent metal. It is due to unsuitable parent metals used in the weld and bad welding technique.



Incomplete Penetration

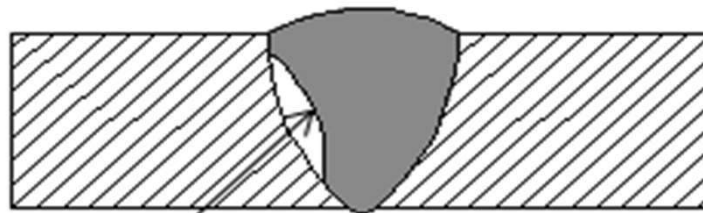
These defects occur only in the butt welds where the groove of the metal is not filled completely. It is also called as incomplete penetration defect.



Incomplete Penetration

Incomplete Fusion

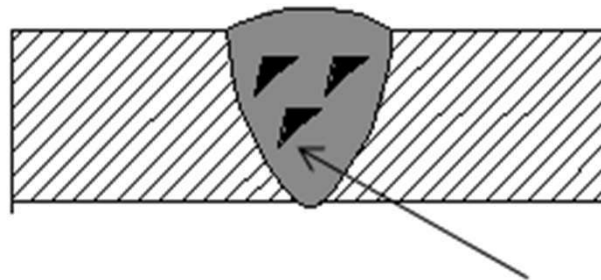
Incomplete fusion occurs when the welder does not accurately weld the material and the metal pre solidifies which leads to a gap which is not filled with the molten metal. Lack of fusion is the failure of the filler metal to fuse with the parent metal.



Incomplete Fusion

Slag Inclusion

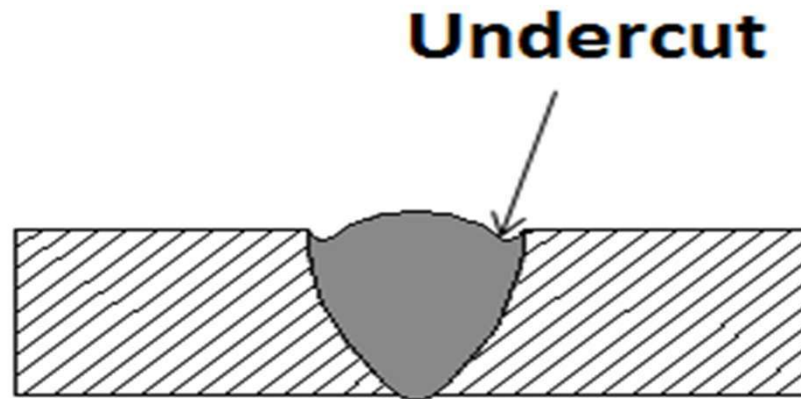
It is the entrapment of slag or other impurities in the weld. If there is any slag in the weld, then it affects the toughness and metal weldability of the given material. This decreases the structural performance of the weld material. Slag is formed on the surface of the weld or between the welding turns.



Slag inclusion

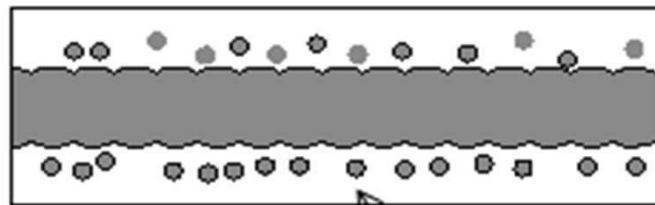
Undercut

When the base metal melts away from the weld zone, then a groove is formed in the shape of a notch, then this type of defect is known as Undercut. It reduces the fatigue strength of the joint.



Spatter

When some metal drops are expelled from the weld and remain stuck to the surface, then this defect is known as Spatter.



Spatter