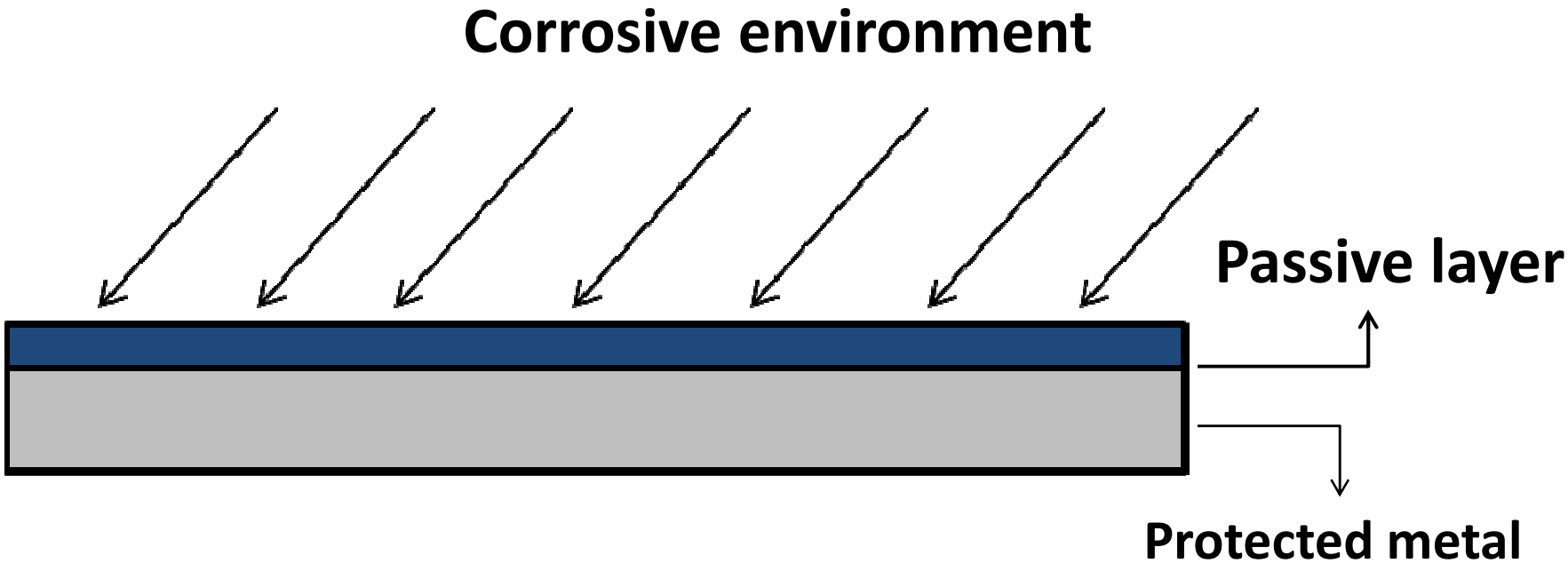
Protection against corrosion using passivation

Definition of Passivation

- The passivation may be defined as the metal or alloy under particular environmental condition form protective layer due to the reaction between the metal and environment.

Protection against corrosion using passivation experiment:



Protection against corrosion using passivation experiment:

1) Weight two sheets of steel (dry and clean from oxide layer).

Protection against corrosion using passivation experiment:

2) Passivate only one of them in 200 ml of solution containing (20 g/l sodium hydroxide and 50 ml of potassium dichromate) for 15 minutes at room temperature.

Protection against corrosion using passivation experiment:

3) Immerse each sheet of steel in 200 ml solution containing saturated ammonium chloride solution for 45 minutes.

Protection against corrosion using passivation experiment:

4) Wash both sides with distilled water then dry with filter paper.

Protection against corrosion using passivation experiment:

5) Reweight the two sheets of steel.

Protection against corrosion using passivation experiment calculation :

- Rc= Wt. loss / (A * t)
- R= √ (g/cm2.min)
- Rp= √ (g/cm2.min)
- Dp= ((R-Rp) / R)*100
- Where:
- Rc: rate of corrosion.
- R: rate of corrosion of unpassivated sheet.
- Rp: rate of corrosion of passivated sheet.
- Dp: Degree of protection.