

• FLOATS :

- Essential component of fishing gear.
- They help in keeping the gear in desired position, obtaining proper shape during operation, maintaining vertical opening in gears like trawls etc.
- Floats used should be :
 - able to withstand pressure,
 - highly buoyant,
 - Should not absorb water,
 - must be light in wt., durable
 - should have means of attachment.

- In trawl floats used along the headline to keep mouth of net open vertically & maintain fishing height.
- In gill net – used along the headline tandem with sinkers to keep wall of netting vertically & maintain fishing in water.
- Purse seine & seine net -- used to keep netting vertically, close to sea surface.
- Long lines – keep lines in desired depth of operation

- Classification :

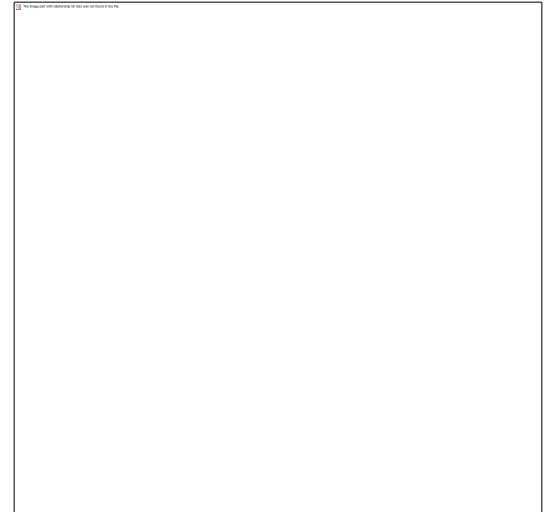
- Floats are differentiated based on density (high/low) of material used for construction & pressure they can withstand.
- Based on pressure they are :
- Surface floats & deep sea floats.
- Based on density of material floats are 2 types :

- **Floats made up of low density materials :**
- **i) Wood :**
- Used in indigenous fishing esp for gill nets.
- Buoyancy is 650 g/1000 cc.
- Easily available , relatively cheap.
- absorb water & crack on drying under prolonged usage in water.
- **ii) Cork :**
- Easily available, highly buoyant.
- mostly used in surface gill net.
- Buoyancy 825 g/1000 cc

- **iii) Thermocole (Expanded polystyrene) :**
- Very highly buoyant (buoyancy 900g/1000cc)
- Very light, do not absorb water.
- They are used for gill nets and seines.
- Their only disadvantage is that they can not withstand pressure.

- **iv) Sponge Plastic**

- These are light, do not rot,
- do not absorb water
- Buoyancy 800–860 g/1000 cc.
- Their pressure resistance is poor.
- Mainly used in gill net & seines.



- **v) Synthetic rubber :**

- Low water absorption, high buoyancy.
- Not lost by continuous operation, easy storage
- possibility to mould into any shape.
- Cannot withstand pressure.

- Floats made up of high density materials :

- i) Glass :

- Made in the form of spheres
- covered by netting to facilitate fixing & protection.
- Increases resistance while towing.
- Do not absorb water &
- can withstand pressure up to 400 m.
- Bigger floats are used in lines & traps.



-

- **ii) Aluminium :**

- Mainly used in trawls & to some extent in gill nets & seines.
- Withstand pressure upto 80 m.
- more buoyant than glass floats.
- Made in two halves & welded
- at the seam.



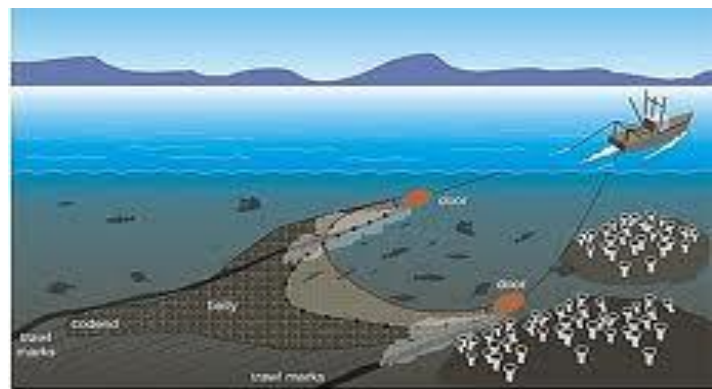
- **iii) Steel :**

- Not very popular.
- Made in two halves & welded at the seam.
- Buoyancy reduced due to thick walls.

- Rust may get accumulated.
- **iv) High density plastic :**
- Used in deep water trawls upto 250 m depth.
- No corrosion problem.
- **v) GRP :**
- Like HD plastic.
- Not readily available & are costly.
- Highly buoyant & can withstand pressure upto 400 m depth.

- **Special floats :**

- In gears like bottom trawl & pelagic trawl more lifting force at lesser drag is required.
- In such cases special floats are used.
- **a) Trawl plane float :** efficiency increases with speed
- **b) Hydrodynamic float :** it has streamlined top & V-shaped bottom.
- **c) Upthrust float :** circular collar like str. around the float. It's a modification of aluminium float.
- **d) Siamese twin float :** made by joining two spherical aluminium floats with curved collar.



(after Christen, 1999)



(after Missaleh et al., 1991)

- **e) Inflatable float** : used in pelagic trawls. They are popular for floatation as storage is not a problem due to their inflatable nature.

- **Calculation of buoyancy of floats :**

- Buoyancy of float made of diff material can be calculated using the formula :

- $$F = W \left[\frac{1}{p} - 1 \right]$$

- Where, F = buoyancy in g
 – W = wt of float in g