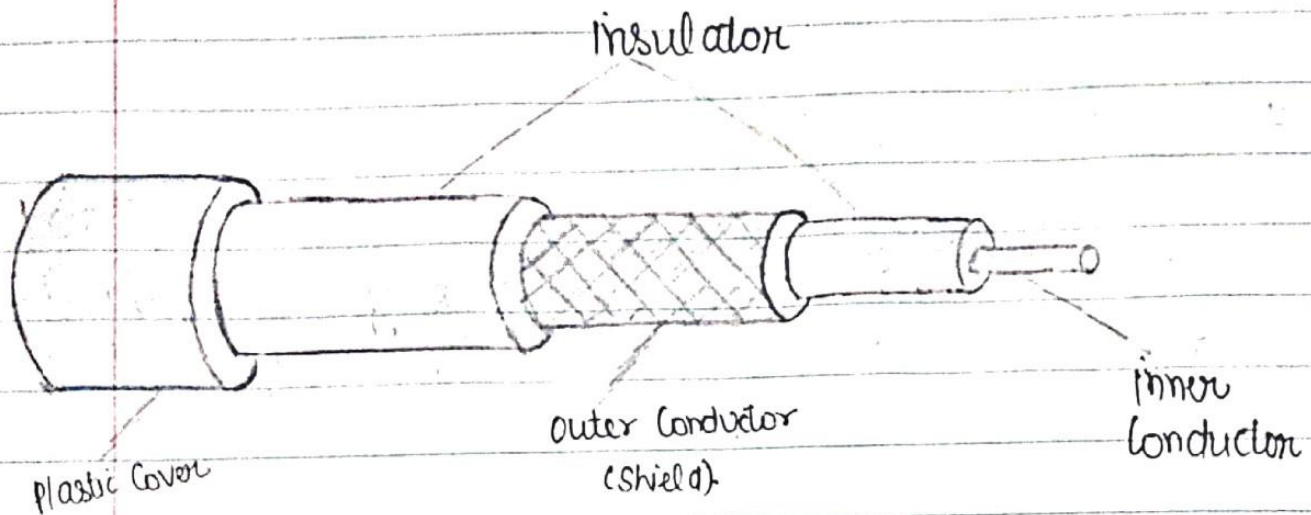


## \* Coaxial Cable:-

- Coaxial Cable is a category of guided media that is used to perform transmission of large frequency signals.
- Coaxial cable also called coax.
- The frequency range of coaxial cable is 100KHz to 500MHz.
- It consists of two primary components:-
  - One central copper wire i.e. covered with plastic insulator called dielectric.
  - A dielectric plastic insulator, surrounds the copper.
  - It is made from non-conductive material such as Polyethylene or Teflon.

This is used to  
Protect from external  
electromagnetic interference

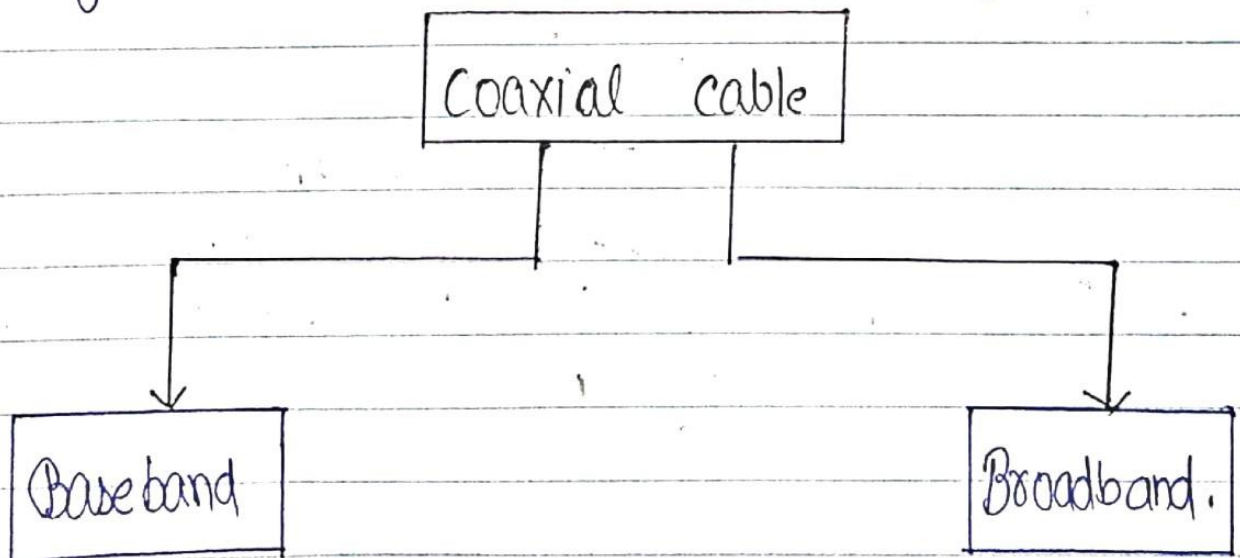
It is used to  
Protect the inner  
layer from physical damage



→ Coaxial cables are commonly used in telephone networks, for cable TV and radio transmissions.

### Types of Coaxial Cables:-

- They are divided into two categories.



## 1. Baseband Coaxial Cable :-

- It support digital Transmission. (Signaling).
- It Supports the frequency range of 0-4KHz.
- Baseband Cables have  $50 \Omega$  (ohm) impedance
- It defines a process that Digital signals consumes entire bandwidth of cable so it does not support FDM.
- Baseband cables easy to install and maintain.
- It offers small coverage only in LAN's.

## 2. Broadband Coaxial Cable :-

- It support analog signaling.
- It Supports the frequency range above 4KHz.
- It covers large area. e.g. Cable TV.
- It is difficult to install and maintain.
- In this, bandwidth is used by multiple

channel, so FDM is possible.

### \* Advantages of Coaxial Cables:-

- It can be used for both analog and digital transmission.
- It offers higher bandwidth as compared to twisted pair cable.
- Inexpensive as compared to optical fibers.
- It has lower error rates.

### \* Disadvantages of Coaxial Cables:-

- It is usually more expensive than twisted pair.