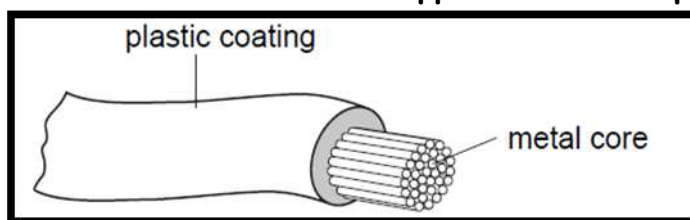


6. Conductors and Insulators

Why are copper and (steel-cored) aluminium cables used?

Why are plastics and ceramics used as insulators?

- Some cables have copper core as copper is a good conductor of electricity.



- Some cables are made of (steel-cored) aluminium. The reason being aluminium is a good conductor and steel prevents it from sagging.

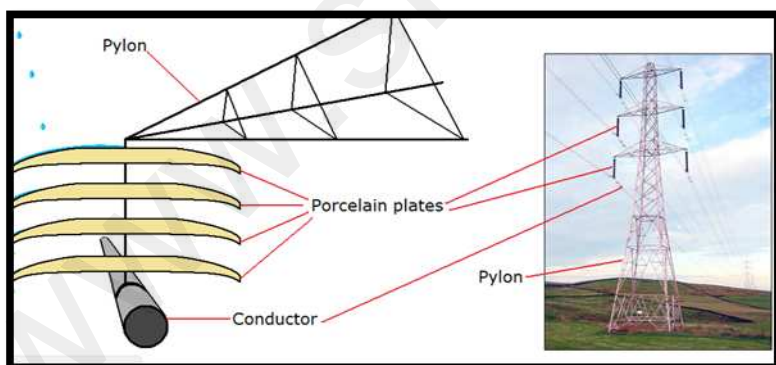
- Plastic and ceramic are insulators as they do not have mobile electrons to conduct electricity.

Plastic coating:

- Cables have a plastic coating as plastic is :
 - an insulator and does not conduct electricity
 - flexible
 - non-biodegradable.

PLASTICS are used for covering electrical wires so that we do not get an electrical shock. But plastics like PVC are less useful when high electric currents need to be passed. This is because the heat from the electric currents melts the plastic coating. To avoid such a problem, thermostatic plastics are used.

CERAMIC AND GLASS are useful insulators as they do not conduct



electricity .They do not melt when a high current flows through them as they have high melting and boiling points. Hence they are used in high voltage electricity towers to keep the wires from touching the pylons or from touching each other.

Other advantages of ceramics are that they are not affected by water or air and they can be moulded into complex shapes.
