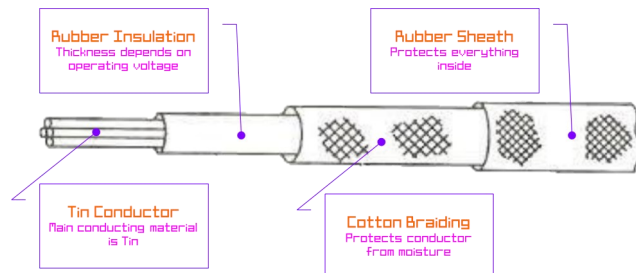


# Wires

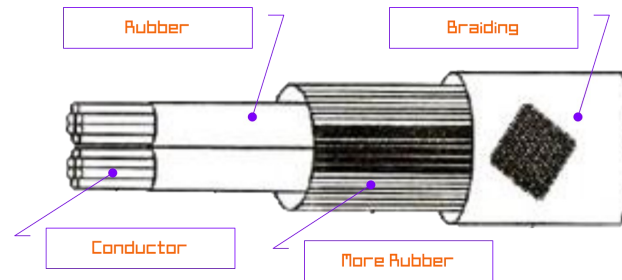
- Wires are used almost everywhere in daily life
- They are an integral part of every electrical circuit
- Basic wires are made of conducting materials like copper, aluminium, silver and iron.
- Copper or aluminium wires without insulation are usually used for grounding connection and also for high tension or high voltage transmission lines.
- Nichrome wire, constantan, manganin, and German silver wires are used as resistance wires in electrical equipment and appliances.
- All wires/cables have resistances that oppose the unlimited flow of current and causes voltage drop resulting in the eventual heat developed in the wire.
- There is a limit to the degree of heat that various types of wire insulation and sizes can safely withstand. They should not be allowed to reach a temperature that might cause a fire.
- Many a times the terms wire and cable are used to describe the same thing, but they are actually quite different. Wire is a single electrical conductor, whereas a cable is a group of wires covered in sheathing.

## Vulcanized Indian Rubber wire (V.I.R)



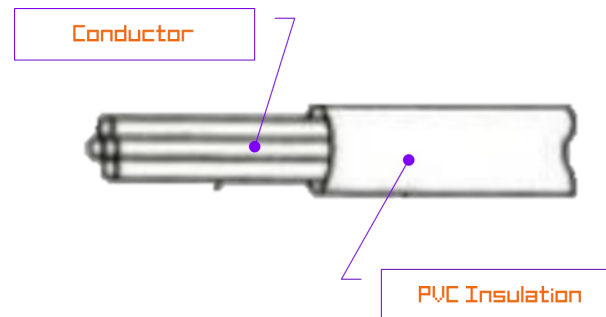
- Wire is finished with the wax for cleanliness.
- Suitable for low and medium voltage only.
- Now a days this type of wires is not in use since a better quality wire are available at cheaper rate.

## Tough Rubber Sheathed wire (T.R.S)



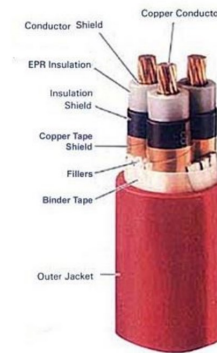
- Modification of V.I.R wire.
- Consists of the ordinary rubber coated conductors with additional sheath of tough rubber.
- Provides better protection against moisture and wear and tear.
- These wires are generally available in single conductor, 2 conductor or 3 conductors.

## Poly Vinyl Chloride wire (P.V.C.)



- Most commonly used wire for wiring purpose
- Softens at high temperatures therefore not suitable for connection to heating appliances
- Available in many types, durable against water, heat, oil, UV light

## Lead Alloy Sheathed wire



- The ordinary wires can be used only at dry places but for damp places these wires are covered with continuous lead sheaths
- The layer of lead covering is very thin, around 1mm thick
- These wires provide little mechanical protections to the wires

## Weather Proof wires

- Used outdoors i.e. providing a service connection from overhead line to building
- The conductor is not tinned - covered with three braids of fibrous yarn - saturated with water proof compound.

## Weather Proof wires

- Copper conductor is coated with magnesium oxide and after that copper coating is done on it
- In case of moisture weather PVC coating (serving) is coated on it
- Used in mines, factory, furnace, boiler, rolling mills, etc
- Magnesium oxide is used for avoiding moisture problems