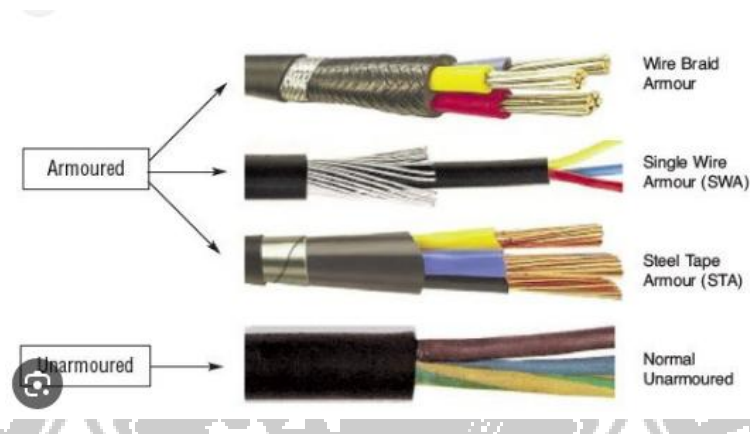


## 2.4 ARMOUR AND PROTECTIVE FINISHES



- This chapter applies mainly to power distribution cables, certainly in relation to armour, as special considerations apply to wiring type cables and to transmission cables.
- Features relating to the design of both these groups of cables are given with the design aspects in the relevant chapters.
- For lead sheathed paper insulated cables, the two universal types of armour are steel tape (STA) and galvanized steel wire (GSW), usually referred to as single wire armour (SWA).
- Steel tapes are applied over a cushion of bituminized textile materials which also contribute to corrosion protection
- Two tapes are applied helically, each tape having a gap between turns of up to half the width of the tape and the second tape covering the gap and overlapping the edges of the first tape
- By applying the two tapes from the same taping head of the armouring machine the lay length of each tape is identical and the tapes register correctly with each other

### Single-core cables:

A problem arises with single-core cables because in their installation formation the armour is situated between the conductors and if a magnetic material is used it causes high induced currents in the armour.

### **Armour conductance:**

Technical details of the importance of armour conductance with particular reference to wiring cables are discussed

### **Armouring for polymeric insulated cables:**

The lower voltage (i.e. up to 3.3 kV) PVC or XLPE cables which have replaced PILS cables require mechanical protection of a similar standard. For various reasons, such as ease of cable handling and armour conductance, SWA is normally used.

Such cables usually have an extruded PVC over sheath (other extruded materials are used for cables to meet certain performance requirements in fires

### **Protective Finishes:**

- Protective finishes are of particular interest for the protection of metal sheaths, reinforcement and armour in buried distribution and transmission cables.
- Whether the installation is below or above ground, very few cables are supplied without a protective finish.
- For the newer designs of the above categories of cable, an over sheath of extruded PVC or MDPE has become nearly universal. protective finish.
- For the newer designs of the above categories of cable, an over sheath of extruded PVC or MDPE has become nearly universal.