

Mechanical Design of Tx lines

- Main components of Overhead Lines
- 1. Conductors
- 2. Supports
- 3. Insulators
- 4. Cross arms
- 5. Miscellaneous items



1. Conductors Materials

- One of the main component of Tx lines.
- Must have the following properties,
 - 1. high electrical conductivity
 - 2. high tensile strength, to withstand mech stresses.
 - 3. low cost so that it can be used for long distances.
 - 4. low specific gravity so that weight per unit volume is small.

Commonly used conductors

- 1. Copper
- 2. Aluminum
- 3. Steel cored aluminum
- 4. Galvanized steel
- 5. Cadmium copper

2. Line Supports

- To support conductors we need line supports, must have the following properties.
- 1. high mechanical strength to withstand the weight of conductors and wind loads etc
- 2. Light in weight without the loss of mechanical strength.
- 3. Cheap in cost and economical to maintain.
- 4. longer life span.
- 5. Easy accessibility of conductors for maintenance.

Types of Supports

- 1. Wooden poles
- 2. Steel poles
- 3. R.C.C poles
- 4. Steel Tower

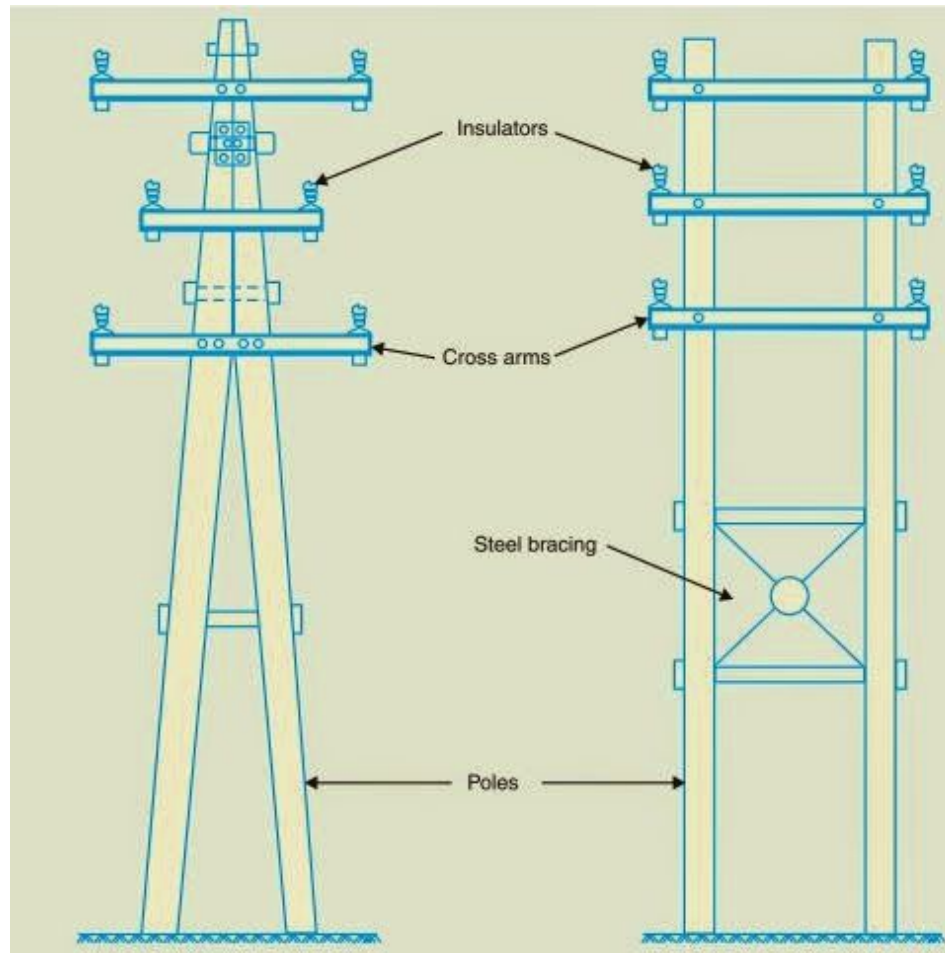
Wooden Poles



Steel poles



R.C.C poles



Steel Towers



Typical Electric Line Structures

