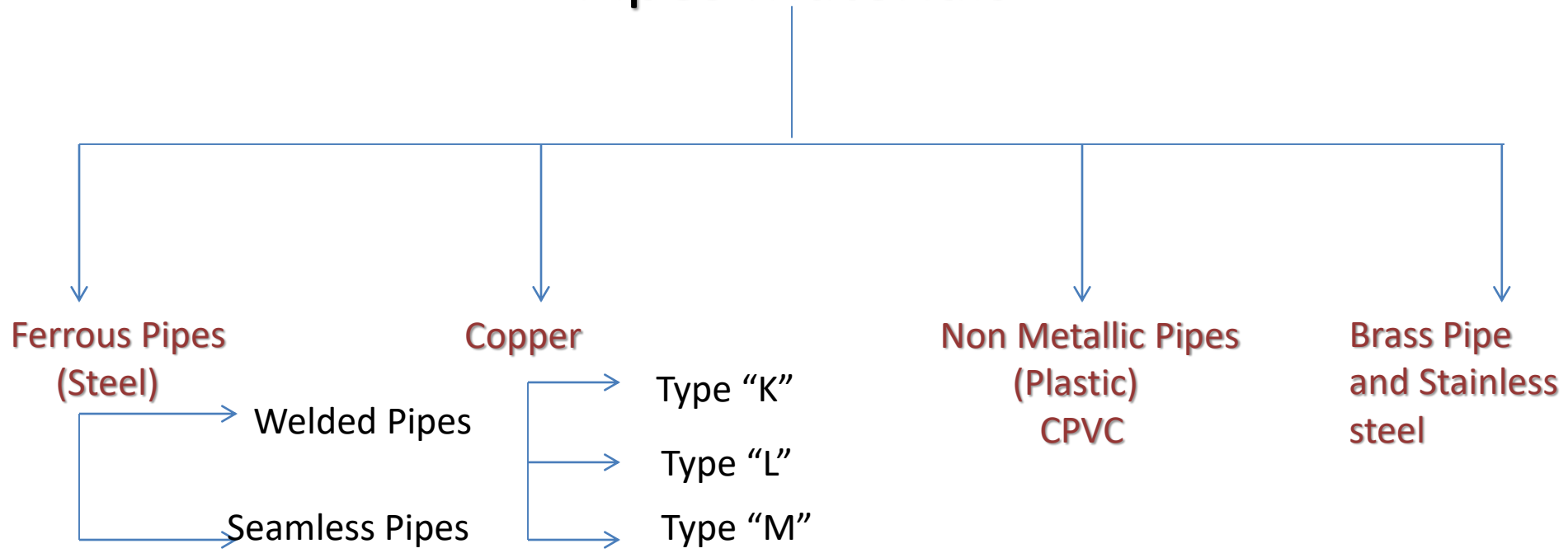


# Pipes, Fittings and Hangers

- **Pipes**

- A. Above Ground Pipes**

## Pipes Materials



# Ferrous Pipes (Steel)

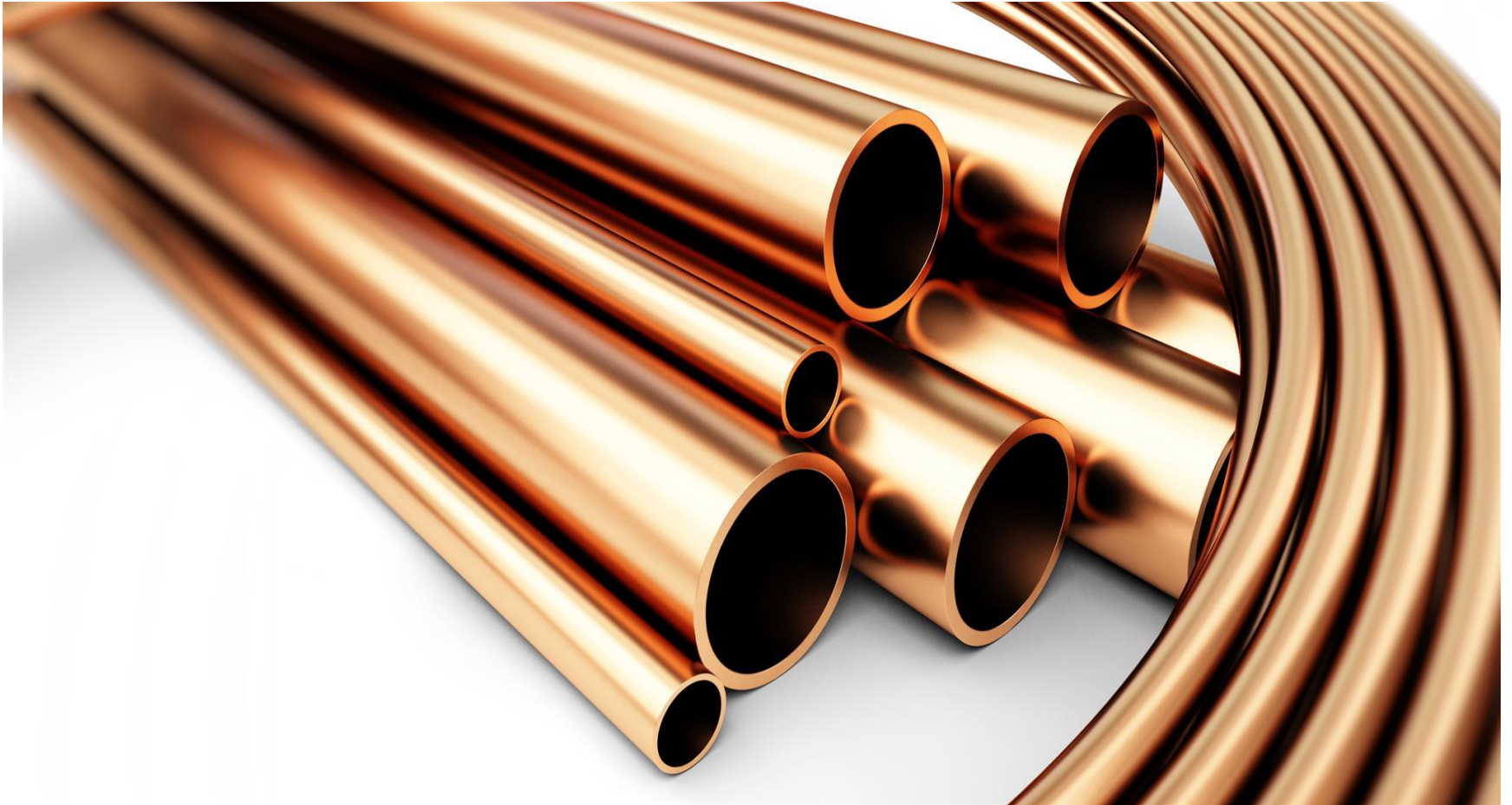
## 1. Welded Pipes



## 2. Seamless Pipes



### 3. Copper Tube



## 4. Non Metallic ( Plastic ) Pipes “ CPVC ”



# Pipe Fittings

- Cross
- Tee
- Elbow
- Reducer
- Flanges



Rigid Coupling



Mechanical Cross



Mechanical Tee



Flange Adapter



Grooved Split Flange



Cross



Reducing TEE



Tee



Reducing Tee  
(Threaded)



Reducing Cross  
(Threaded)



90° Elbow



45° Elbow



22.5° Elbow



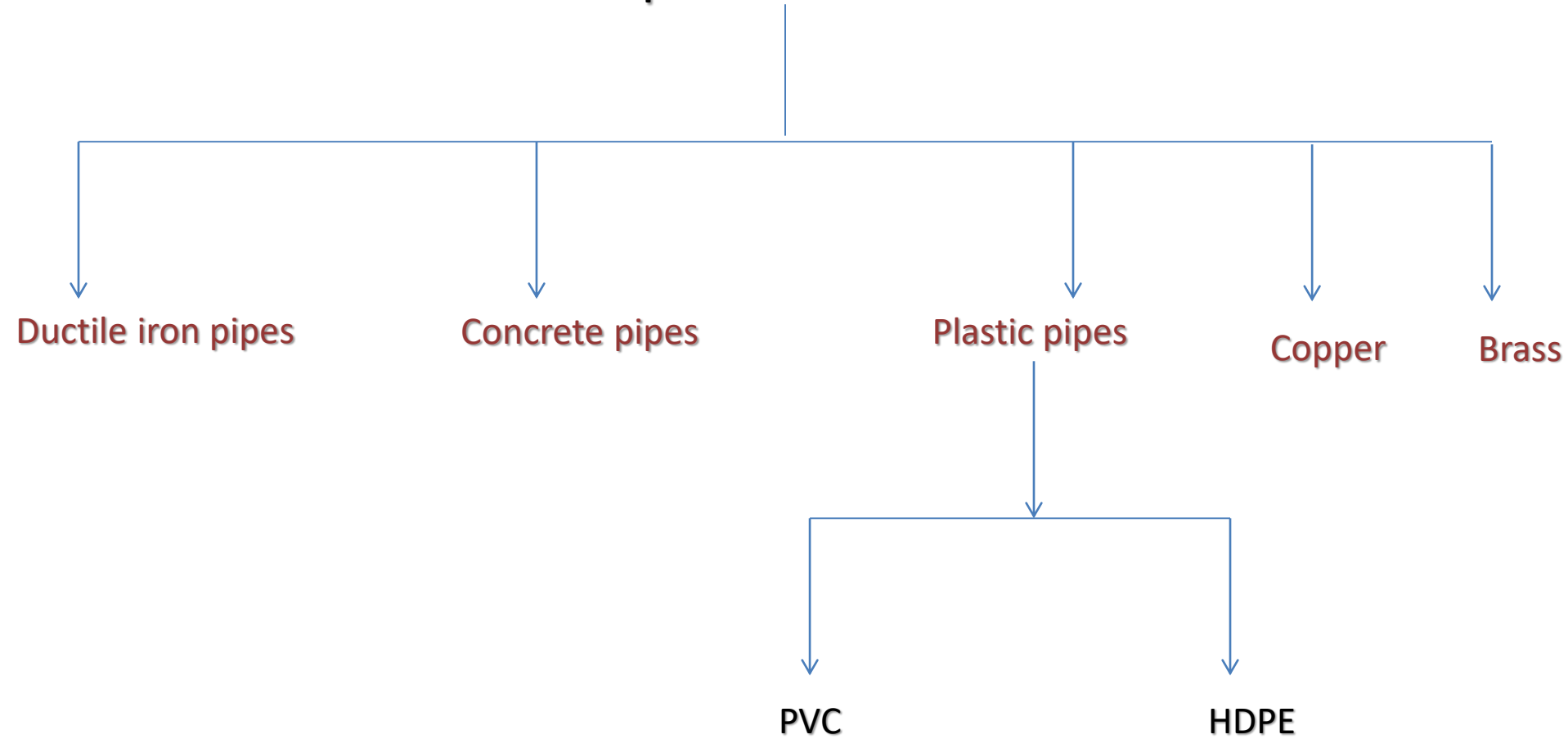
Concentric Reducer  
(Grooved)



Concentric Reducer  
(Threaded)

## B. Under Ground Pipes

### Pipes Materials



# Ductile iron Pipes





# Concrete Pipes



# PVC Pipes



# Copper Pipes

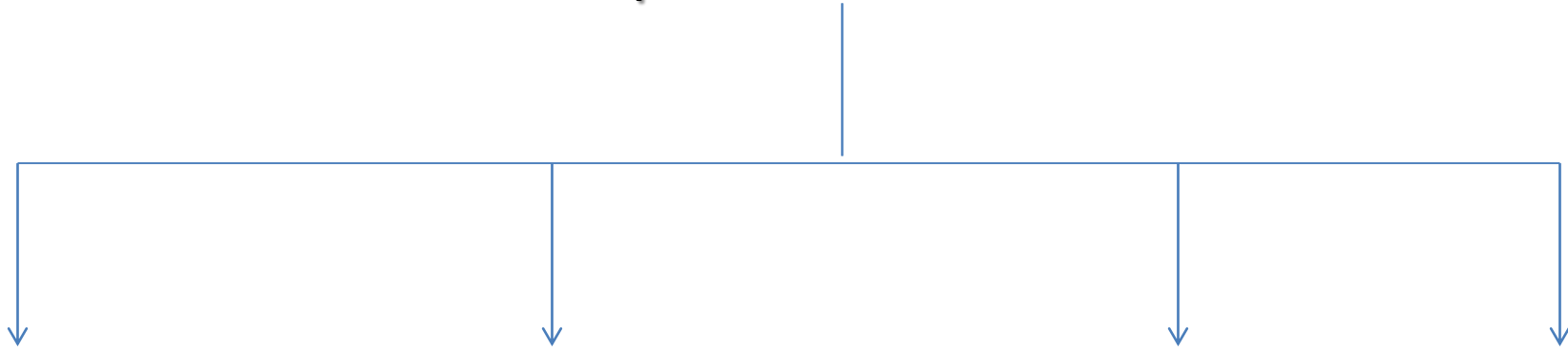


# Brass Pipes



# Pipes Connections

## Pipes Connections



Threated Connections

Welding connections

Flanges conn.

Grooved or  
Coupling Conn.

# Threaded Connections



# Welding Connections

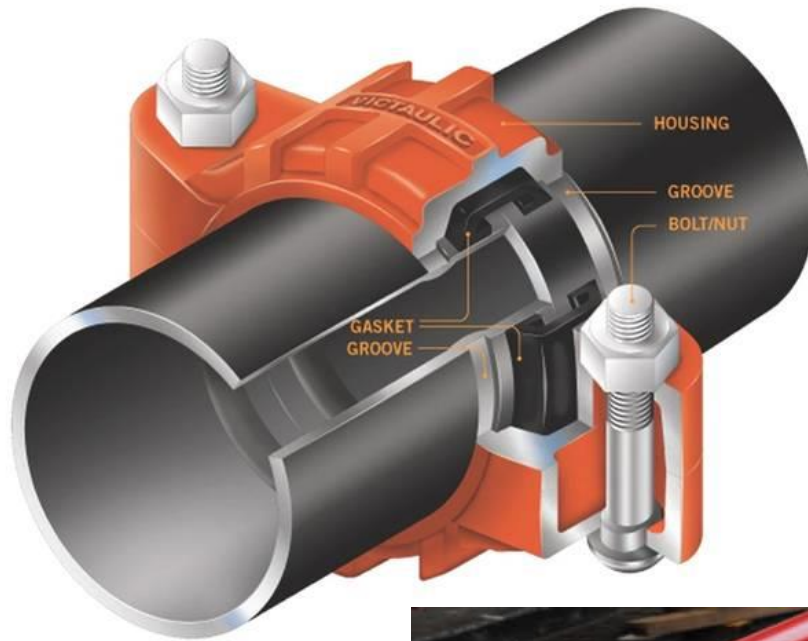


# Flanges Connections





# Grooved Connections



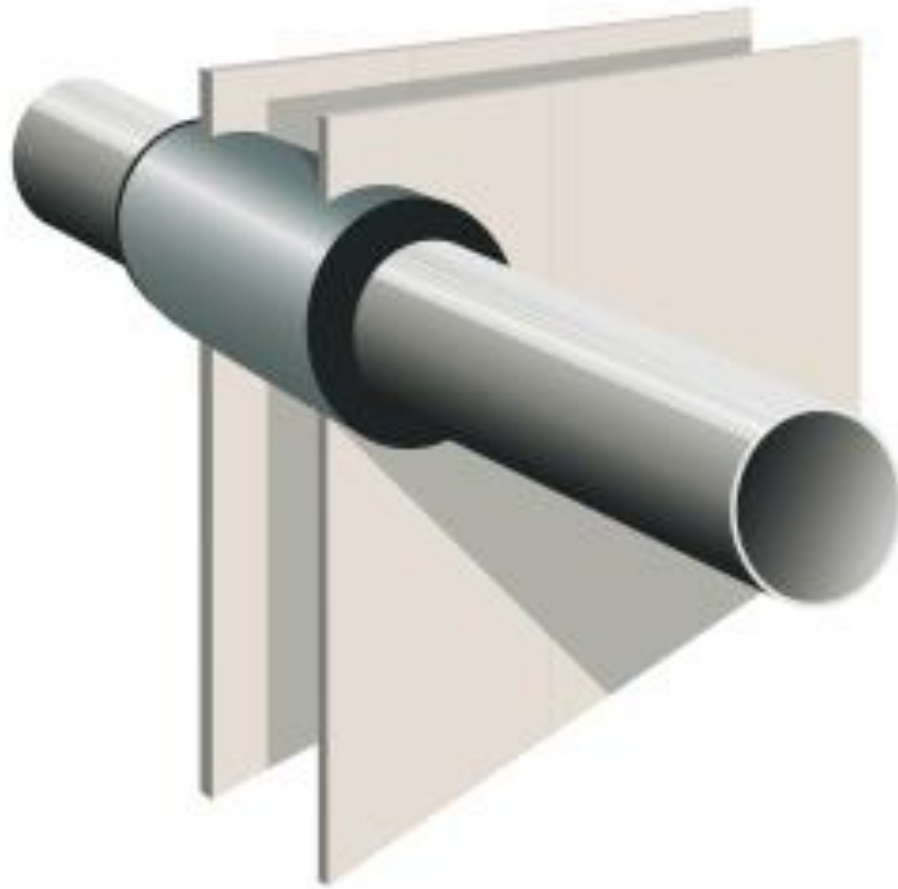
- For Steel Pipes

- For 2 in and smaller----- Radius of bend  $\geq 6$  Pipe Diam.
- For 2.5 in and larger----- Radius of bend  $\geq 5$  Pipe Diam.

- For Other Steel Pipes

- For all sizes----- Radius of bend  $\geq 12$  Pipe Diam.

# Pipe Sleeves





# Hangers



- Maximum distance between hangers

	Nominal pipe size ( mm )						
( mm )	20	25	32	40	50	65	80
Steel pipe ( m )	NA	3.7	3.7	4.6	4.6	4.6	4.6

# Hanger Rod Size

Pipe Size	Diam. Of Rod (mm)
UP to 4 in	10
5,6,8 in	12
10,12 in	16