Plastic

❖ uPVC

- ❖ uPVC actually stands for unplasticised polyvinyl chloride.
- ❖ uPVC is also commonly known as rigid PVC
- ❖ It is called this because it is hard and does not flex.
- ❖ It is incredibly resistant to chemical erosion
- ❖ It also functions well in a wide range of temperatures and operating pressures.
- ❖ PVC is less durable than uPVC

Plastic

FRP

- FRP means Fibre-reinforced plastic (FRP) [also fibre-reinforced polymer and glass fibre plastic (GRP)].
- A composite material made of a polymer matrix reinforced with fibres.
- It is one of the strongest and most durable materials in the world
- Light weight with high strength
- Corrosion free and impact resistant
- Dimensional stability
- Electrically non-conductive
- Non-magnetic and non-sparking

❖ How to Prepare

Plastic

❖ How to Prepare

Fibres used are:

- ✓glass,
- ✓carbon,
- ✓Aramid
- ✓basalt.

Plastic

FRP

electric goods

overhead water tanks

bath sink units

Corrugated sheet

Plastic

❖ Uses of Plastic

doors, windows

PVC pipes

Plastic

Concrete shuttering

Internal partitions and wall paneling

Paints and Varnishes

Paints and Varnishes

❖ What is Paint?

- ❖ Paints are coatings of fluid materials applied over the surfaces of timber and metals.
- ❖ It is usually defined as a dispersion of pigments in a drying oil, with addition of driers and thinners.

Paints and Varnishes

❖ Objectives of Paintings

- ❖ To protect the surfaces from weathering actions.
- ❖ To prevent decay of wood or metals.
- ❖ To give good appearance and smooth surface of wood or metal.

Paints and Varnishes

❖ Characteristics of Ideal/good Paints

- ❖ It should have good spreading power.
- ❖ It should be cheap and economical.
- ❖ It should dry out in a reasonable time.
- ❖ It should be long lasting.
- ❖ It should not affect the health of painters.
- ❖ It should stand the weathering effect.
- ❖ It should possess attractive and pleasing appearance

Paints and Varnishes

❖ Ingredients of Oil Borne Paint

- A base
- A vehicle or carrier
- A drier
- A coloring pigment
- A solvent
- Inert filler
- Plasticizer

Paints and Varnishes

❖ Base

- A base is a solid substance in a fine state of division.
- It forms the bulks of a paints
- It determines the character of a paint
- It imparts durability of paints
- It reduces shrinkage cracks on paints on drying.
- Example: White lead, Red lead, oxide of iron, Aluminum powder, Titanium white

Paints and Varnishes

❖ A Vehicle or Carrier

- A vehicle is a liquid substance which hold the ingredients of paints in liquid suspension.
- It helps spread the paint evenly and uniformly.
- It works as a binder for the ingredients of paints.
- Example: Linseed oil, Tung oil, Poppy oil, Nut oil .

Paints and Varnishes

❖ A Drier

- It accelerates the process of drying.
- It may be in the form of soluble driers or paste driers.
- It increases the durability of pains and brings down the cost of paints.
- It also prevents shrinkage and cracking.
- More than one drier is used in a mixture.
- It should not be used unnecessarily. Excess injures the color of paints and destroy the elasticity of paints.
- Example: Cobalt, lead, manganese.

Paints and Varnishes

❖ A Coloring Pigment

- It is used to have a different color other than the base of paint.
- It is available in the form of powder.
- It provides required shade and color to the paints
- It reduces the intensity of development of cracks due to drying of the vehicles
- Example: Graphite (black color), Indigo (blue color), Copper sulphate (green color), Carmine (red color), Zinc chrome (yellow color).

Paints and Varnishes

❖ A solvent/Thinner/Diluents

- It is a liquid and volatile substance added to paints to make its applicability ease and smooth
- It is used to make a paint thin to spread easily
- It also helps in penetrating the paint through the porous surface.
- However, it reduces durability, lessens the gloss, flatten (crush) color.
- Example: Turpentine, mineral spirits, xylol, dipentine

Paints and Varnishes

❖ Inert filler

- It is an adulterant usually mixed in an oil paint to modify its weight
- It is used to improve its durability and economy in the cost of base used
- Example: Silica, charcoal, gypsum, etc.

Paints and Varnishes

❖ Plasticizer

- Plasticizers are used to give elasticity to the film.
- They minimize or prevent cracking.
- Some oils are used as plasticizers.

Paints and Varnishes

❖ Types of Paints

- Aluminium paint
- Anticorrosive paint
- Bituminous paint
- Cellulose paint
- Cement paint
- Emulsion paint
- Enamel paint
- Oil paint
- Plastic paint
- Synthetic rubber paint

1. Few properties
2. Ingredients
3. Applications