

3.6 Finishing techniques

There are many finishing techniques for woods, metals and plastics. Plastics do not generally require a great deal of finishing because of the nature of the material.

Finishing is carried out to improve the following:

- **Aesthetics** – the appearance of the material
- **Functional properties** – protect the material from deteriorating and to prolong its useful life

Suitability of a finishing process depends on

- Material being used
- Where it is going to be used

Metal and wood surfaces must be prepared before using the chosen finish. This means for metal using emery cloth or wet and dry paper. If metal is to be painted, it needs to be degreased using methylated spirits. Wood needs to be planed, filed and sanded before applying a finish.

Varnish.

- Synthetic resins (plastic varnishes) produce a much harder, tougher surface than some natural finishes such as shellac.
- They are heatproof and waterproof and fairly resistant to knocks.
- Available in a wide range of shades and finishes such as matt and gloss.
- Applied in thin coats, rubbed down gently between each coat.
- Time consuming to apply.
- Dust can settle on it between coats.

Wax polish.

- Wax oil produces a dull gloss shine.

- Made from beeswax which has been dissolved in turpentine (turps) to form a paste. It is applied using a cloth. The addition of silicon wax or carnauba wax increases the durability of the wood.
- Before wax is applied, the wood needs to be sealed.
- Wax is used to show off the natural grain of the wood material. However it can mark if a hot cup on it.

Stain.

- Staining or colouring enhances the natural grain of timber.
- It is a decorative finish and allows for an application of colour.
- Stains can be water based, spirit based or oil based.
- Spirit based stains dry more quickly.
- Oil based stains last longer and are more versatile.
- Spirit and oil based stains are flammable and must be used in well ventilated areas due to fumes.
- Available in wide range of colours and can be used to mimic other woods.
- Applied using a brush or cloth. In industry products can be dipped which speeds up process and allows more even coating.

Paint.

- Woods and metals can be painted. It is used to provide a protective layer when used inside or outside and is decorative.

Woods

- Knots need to be sealed to prevent resin leaking out which spoils the appearance
- Sand down surface to get rid of any sharp edges or corners
- Wood then has to be sealed with a primer
- An undercoat is then applied after the sealer is lightly sanded.
- Top coat is then applied
- Most paints are either oil or polyurethane based.

- Both are durable and waterproof but the polyurethane type is generally much tougher.

Metal

- Very important to prepare metal before painting.
- All surface oxides (rust) must be removed and surfaces degreased.
- A red oxide paint is generally applied as a first coat to prevent further oxidisation.
- Primer and undercoat is applied before the final top coat. Surface must be rubbed down gently between each layer with fine wet and dry paper.

Plastic dip coating.

- Dip coating is suitable for most metals.
- Used for coating products such as hanging baskets, brackets, kitchen drainers and tool handles.
- Metal must be cleaned and degreased before heating to 180 degrees C.
- The metal is then dipped into the plastic granules and taken out
- Returned to the oven to allow the metal to bond to the metal
- Disadvantage is that over time the plastic becomes cracked and breaks off the metal.

Electroplating.

- Often used to give metals such as brass and copper a coating of a more decorative, durable metal such as silver or chromium.
- This means a cheaper metal can be used and then a more expensive metal coating on top.
- Process is carried out by electrolysis which means the product is charged and the solution acts as a conductor.
- Process is expensive and takes a long time to create a layer of the required thickness.