UNIT 5: COMPOSITION, CARE & CLEANING OF DIFFERENT SURFACE

METALS

1. **SILVER:** Soft, malleable and ductile metal with a brilliant sheen. Used as EPNS (Electroplated Nickle Silver) for making cutlery, utensils & decorative artifacts.

Types of silver

- **Sterling Silver:** Alloy containing 92.5% silver and rest copper. Copper hardens the silver without affecting its properties. More expensive than silver plated alloy, so not used in hotels. Usually used for jewellery.
- **Silver plating:** Table silver or silverware is made of silver plated alloy. A base is made with an alloy of nickel, copper and often brass and no silver. However they are plated with silver by electrolysis. The resultant is EPNS (Electroplated Nickel Silver).

Maintenance challenges:

- ✓ **Silver pits:** Small pits on articles. If left in contact with salt for too long especially cutlery. To prevent pitting, silver cruet sets should be fitted with glass liners and silver spoons should not be kept in salt for long.
- ✓ **Scratching:** Silver being soft metal gets scratched easily if rubbed with hard scrubbers or surfaces.
- ✓ **Tarnishing:** Action of compounds of sulphur / oxide present in atmosphere and certain foods like fish, onion, pickles, juices etc. Tarnish is Silver Sulphide / silver oxide varies from yellow, brown to blue black in color.

Cleaning / Polishing Procedures:

- **Regular cleaning:**
  1. Wash the article with hot detergent solution, scrubbing with cotton cloth.
  2. Rinse in clean boiling water.
  3. Drain water and wipe when still warm with lint free cloth.
  4. Toothpaste (soft abrasive) can be rubbed over the article and left for some time and then washed off.
- **Silver Dip:**
  1. Used for tarnished silver. It is a pink color liquid based on acid solution of THIOUREA compound into which articles are immersed completely, for very short time, friction not required.

2. Then washed with warm water and dried.
3. It should not be used too frequently and do not put in stainless steel containers.

- **<u>Polivit or Aluminum Soda method:</u>**
    1. Silver articles immersed in hot soda solution containing a plate of perforated aluminium for 10 mins.
    2. A chemical exchange takes place to remove the tarnish transferring Sulphur to Aluminum plate.
    3. Then article is rinsed in boiling water & dried with lint free cloth.

- **Proprietary Preparations:**
    1 **<u>Jeweler's rouge</u>** – A very fine powder of iron/ferric oxide which is rubbed on the silver surface to polish it. It is available as powder, bars, paste and even laced on a polishing cloth.
    2 Polish rubbed on article, allowed to dry and then buffed. Eg. SILVO

- **Plate Powder:**
    1. Pink powder mixed with methylated spirit to form smooth paste.
    2. Paste rubbed don article and left to dry. Then rubbed off with rags.
    3. Rinsed with boiling water and wiped with clean cloth.

- **Burnishing Machine:**
    1. Consists of revolving drum. Highly polished steel balls are immersed in detergent solution with silver articles. The steel balls should always be kept under water to prevent rusting.
    2. The machine rotates and friction between steel balls polishes the silver.
    3. Articles are rinsed in hot water and dried.

2. **STEEL:** An alloy of Iron. Mainly iron and carbon. Used in the form of Chrome steel for manufacture of baths, sinks etc and stainless steel for cutlery, sanitary ware, furniture, utensils etc.

Types of Steel:

- **Chrome steel:** Steel coated with Chromium. Ex. in taps, shower fittings etc. Doesn't get tarnished, only becomes spotted with water.
- **Stainless steel:** Steel + 8-25% Chromium, making it corrosion resistant. Used in cutlery, sinks etc. For spoons & forks: steel + 18% chromium + 8% nickel are used. Harmed by silver dip, bleaches and acidic solutions.
- **Galvanized steel:** Steel coated with zinc to prevent tarnishing. Used for buckets.

Cleanining / Polishing:

- Washed in hot detergent solution with soft nylon scrubber, rinsed in clean water and dried with linen cloth. (No harsh abrasives).
- For greasy stains Sodium Bicarbonate can be used.
- Occasionally polished to remove scratches and stubborn water marks.(proprietary polish)

3. **COPPER:** Metal with orange brown tinge. Used in wall paneling, cutlery, cookware, vases, bowls etc. Copper cookware lined with tin or nickel as it reacts with some foods. May be lacquered to avoid tarnishing.

    Lacquering is a process of coating the metal with shellac (flakes of lac – animal resin) solution giving it a protective coat.

Cleaning / Polishing:

- ✓ Washed in warm water, rubbed with a mixture of salt, fine sand and vinegar.
- ✓ Rinsed in warm water and dried with lint free cloth.

- ✓ Thin coat of vegetable oil applied to avoid tarnish.
- ✓ Heavy tarnish: weak ammonia solution used.
- ✓ May be polished with proprietary polish. Unlacquered copper requires frequent polishing.

4. **BRASS:** Golden- brown alloy of COPPER & ZINC. Used in making window fittings, railings, taps, ashtrays etc. It tarnishes & scratches easily, thus are usually lacquered.

Cleaning / Polishing:

- ◊ Remove dirt from surface with a duster.
- ◊ Rub the article with a paste of tamarind & salt. Or, Paste of white flour, salt and vinegar in equal parts to remove mild tarnish. Rinse, dry and polish.
- ◊ In very bad cases, soak brass article for 12 hrs in washing soda solution and then rinse and polish.
- ◊ Polish with BRASSO or KIWI CLEAN BRASS.

5. **BRONZE:** Brown alloy of COPPER & TIN. Used in making works of art and medals.

Cleaning / Polishing:

- ✦ Dust the article, wash well with water.
- ✦ Apply one part muriatic acid and two parts water.
- ✦ Allow it to dry and then polish with vegetable oil.

6. **ALUMINUM:** Silvery, light weight, malleable & ductile. Used in light fittings, window frames, furniture items, door fittings, utensils etc. Not tarnished by air but harmed by alkalis and stained by acids, so anodized to prevent damage.

Cleaning / Polishing:

- ❖ Wash in hot detergent solution, scrub with soft steel wool.
- ❖ Use mild abrasive only in case of stubborn stains.
- ❖ Discoloration can be removed with boiling solution of water & lemon, rinsing and drying.
- ❖ Showpieces may be polished to maintain gloss.

7. **IRON:** Silver – white metal of great strength. Used in making furniture, buckets, cookware etc. Iron can be forged or cast. Wrought iron is shaped by heating and hammering when hot, thus FORGED. CAST iron is hard alloy of iron, carbon and silicon cast in mould.

Maintenance challenges:

- Cast iron utensils need to be seasoned before first use to prevent RUSTING.
- Article is washed in mild soap and dried.
- Inside surface is rubbed with vegetable oil and heating in slow oven for 2 hrs.
- Enamelled cast iron requires no seasoning.

Cleaning:

- Unprotected iron should be washed only when required and dried thoroughly.
- Galvanized iron requires regular washing and thorough drying.
- Rust can be removed with fine steel wool dampened in oxalic acid.
- Don't store in damp areas.
- Before long term storage, coat with oil or black lead(Graphite).

GLASS

Glass is a transparent, lustrous, and brittle material made from silica or sand. A mixture of pure, fine sand, soda or potash, and other ingredients.

Glass manufacturing: These ingredients are carefully measured out. This is called **'batch'.** The batch is fed into a furnace and heated to an extremely high temperature, above 1300 degree Celsius, where it fuses into molten glass. From the furnace, the molten

glass is led away for shaping with various casts / instruments. After shaping, the glass is cooled by a process called **'annealing'.**

Glass is used in making Doors, Windows, Furniture, Vases, Lighting fixtures, Mirrors, Partitions, Tableware, Kitchenware and Bottles

GLASS CLASSIFICATION

- On the basis of constituents and properties
- On the basis of use and form
- On the basis of safety

Classification on the basis of constituents:

- **Soda-lime glass** – it contains sand, soda ash and lime stone. This is an inexpensive, ordinary glass.
  This glass is used for inexpensive flat or hollow glassware, windows mirror etc.
- **Lead crystal glass -** it contains sand, pot ash and lead oxide. This is an attractive glass with fine lustre and softer than soda lime glass. This glass can be cut easily. Used for expensive hollow glassware and artifacts.
- **Borosilicate glass -** it contains sand and borax. This is a hard, heat resistant glass. Borax cuts down the rate of expansion when the glass is heated. It is used for ovenware, flameproof glass cookware.

Classification on the basis of use:

- **Flat Glass -** It is usually soda-lime glass, used in making windows, table tops, and shelves.

- **Fibreglass** - Glass can be manufactured as a textile fibre, which may be used for making curtains and fire blankets. Fibreglass may also be manufactured as rigid sheets of plastic or other material with glass filaments embedded for strength. Fibreglass is fire-proof, impermeable, and resistant to damage by pests, sunlight, or air. They are also used to manage acoustics in an area.
- **Obscured Glass** - This is a type actually derived from flat glass. It is textured from one side, so that some light passes through and some is blocked or distorted, so that the material is not entirely transparent. It is used in making bathroom windows and the areas where privacy is desired.
- **Hollow Glassware -** This is produced by blowing, moulding, and pressing molten glass into the desired shapes.
- **Cut Glass** - This glass is expensive and used for chandeliers, vases and quality glassware.

Classification on the basis of safety:

- **Obscured Glass with wire -** Wire is incorporated in obscured glass during the rolling process.
  If broken, the glass pieces will be held in place by the wire until knocked out of the 'frame' for repair.
- **Laminated Glass -** This consists of two thin sheets of glass with transparent plastic sandwiched between them. If a laminated glass sheet breaks, the glass pieces will adhere to the plastic layer.
- **Toughened Glass -** This is made by heating the glass sheet to a temperature just below softening point and then cooling the surface rapidly. This glass is five times tougher than annealed glasses.
- **Toughened & Laminated Glass -** This safety glass is made by the combination of the above mentioned two methods laminating and toughening.
- **Borosilicate glass -** . This glass is a hard, heat resistant glass. Borax cuts down the rate of expansion when the glass is heated. It is used for ovenware, flameproof glass cookware.

<u>Cleaning Procedure (Flat Glass)</u>

- Even slight marks and smudges show prominently on glass surfaces. Therefore

glass surfaces, especially flat sheets, require frequent cleaning.

- Dusting should be done daily with a lint-free cloth.
- Damp dusting needs to be done whenever necessary. Light soiling and greasy fingerprints should be wiped away with a solution of vinegar and water (1:1) or a solution of 9ml liquid ammonia in approximately 1 litre of water.
- Glass cleaners applied with a sponge also clean glass effectively.
- For cleaning larger surfaces, a small window squeegee may be used.
- Stubborn marks on mirrors—such as toothpaste deposits, hair-spray, and make-up—should be removed by wiping with a cloth moistened with methylated spirit.
- Newsprint contains an effective solvent, therefore newspaper can be used to remove marks from windows too.
- Use a lint-free cloth to dry the glass surface afterwards.

Cleaning of Hollow glassware & other articles

- Textured or engraved glass ware should be cleaned whenever necessary, using a soft nylon brush.
- Abrasives should be avoided.
- Discoloured or stained bottles and vases can be cleaned using a mixture synthetic detergents, and warm water.
- For jars and bottles, a mixture of construction sand and water can also be used to remove discolouration.
- Alternatively, clean by filling them one-fourth full with a mixture of vinegar and water (1:1) and add a few potato pieces, gently shaking till the marks disappear.
- To remove lime deposits from hard water in water jugs, vases, and tumblers, soak the items in distilled water for an hour, scrub with a nylon scrubber and synthetic detergent solution, and rinse with water.
- Dry the articles with a lint-free cloth.

Chandelier Cleaning

- Chandeliers are usually featured in the public areas i.e. in lobbies, banquet halls, and VIP suites.
- They can be cleaned by bringing down and cleaning each piece with spirit.
- Cleaning chandeliers is a time-consuming laborious process; but it should be done with utmost care since parts from a chandelier , once broken, may not be easy to replace.
- For cleaning purpose, chandeliers are taken down, dismantled piece by piece, and dipped into a warm solution of synthetic detergent.
- Each piece is then gently cleaned with a nylon scrubber and rinsed in clean warm water.
- A second rinsing is done in a mixture of one teaspoon liquid ammonia in 2 ½ litres of water.
- This results in a brilliant sparkle.
- Another method, which is more efficient, uses an upholstery shampooing machine.
- The machine sprays a detergent solution through a fine nozzle with enough pressure to clean each prism.
- The dripping wash water is collected in a catch basin or cloth installed below the chandelier.

LEATHER

Leather is made from the skins of various animals- including sheep, goat, pig and cattle. It is one of the durable & versatile of all natural materials. The skins are treated in various ways to get different varieties of leather. Some varieties of leather:

- KID: Light colored leather produced from skin of young goats. Used to make shoes and gloves.
- SUEDE: Soft and flexible leather obtained from sheep skin, specially treated. Used to make shoes, belts, coats & handbags.
- MOROCCO: Leather made from goat skin which is very soft and long wearing. Used in book bindings.
- CHAMOIS: Kind of leather used mainly for cleaning and polishing. Originally, skin of antelope was used, but now simulated sheep skin is used.

Leather can be dyed in a variety of colors and is used for belts, gloves, shoes, purses, wallets, luggage, upholstery, book bindings etc. It is expensive and should be kept supple to prevent cracking. It also picks up oil & grease readily.

Cleaning of leather

- ◊ General cleaning involves daily dusting or suction cleaning.
- ◊ In case of soiling, wipe the leather with soft cloth wrung out of warm water and mild detergent.
- ◊ Follow with damp dusting with clean water and then dry thoroughly. Soft brush may be used for stubborn stains.
- ◊ Occasionally leather may be polished with a good leather cream polish to keep it supple.
- ◊ Solvents should not be used on leather as they stiffen it.

Leatherite: A brand name for an imitation leather product consisting of chemically treated and vulcanized paper or other vegetable fiber or bark of tree.
OR
An obsolete name for an IMITATION LEATHER consisting of chemically treated paper combined with rubber and sandarac (resin obtained from coniferous tree)

Rexine: It is faux leather is primarily vinyl (poly vinyl chloride, or PVC), but also contains plasticizers to make it flexible (as compared to PVC tubing), stabilizers to make it light and ozone resistant and the fabric backing. The backing is probably cotton, but could also be nylon or polyester. The plasticizers, usually a phthalate of some sort, are generally considered 'safe,' but will probably break down when burnt. The

stabilizers are typically heavy metals (lead, etc), but those won't vaporize, or likely even melt out when the fabric is burnt. Chlorine gas is released the burning of faux leather.

PLASTICS

Plastics are resinous synthetic polymers that have the following qualities or advantages:

- They are light in weight.
- They are resistant to most chemicals.
- They are non conductors to electricity.
- They are easy to clean.
- They are resistant to moths and other pests.
- They are available in attractive colors.
- They are on whole reasonably priced.

They have the following disadvantages:

- They can be scratched if harsh abrasive are used on them.
- They have a tendency to discolor and crack.
- They produce toxic fumes on burning.
- Thy attract dust due to static electricity.
- They are non biodegradable.

Types of plastics:

Plastics may be of two types according to their properties:

1. **Thermosetting plastics**: These are **HARD** plastics that are moulded by heat and pressure and do not usually soften when they are reheated
   Some examples are:

   - MELAMINES: This group of plastics is used in making tableware, trays, laminated worktops, wall panels and shelves.

   - PHENOLICS: These are used in making buckets, trays, telephones, door handles and electrical fittings. These are not affected even by boiling in water, so that they are suitable for making kitchenware.

- LAMINATES: These are manufactured by subjecting layers of paper impregnated with plastic resins, such as phenolics or melamine, to high temperature and pressure. A texture may also be introduced in laminates. These may be stuck directly to wall surfaces or to plywood. They may be used for making wall panels, countertops and furniture.

2. **Thermoplastic:** These are **SOFT** plastics that soften when exposed to heat and harden again when cool. Most of the plastic materials used in hotels fall under this group. Some commonly used thermoplastics are:

   - ACRYLICS: These are light weight plastics that scratch easily and are damaged by very hot liquids. These are used in trays, sanitary ware, telephones, furniture and protective panels.

   - POLYESTERS: These are lightweight, water resistant and color change resistant plastics. These are used in trays, lampshades, sinks, furniture etc.

   - POLYSTYRENES: These are used in domestic equipments and utensils, refrigerator linings and fan blades and expanded polystyrene is used in disposable utensils (STYROFOAM).

- **<u>POLY-TETRA-FLOURO-ETHYLENE (PTFE or TEFLON):</u> These are tough plastics used** in kitchen ware. These are sometimes bonded to iron or aluminium to give smooth, non stick surface.

- <u>POLY VINYL CHLORIDE (PVC):</u> These are used in upholstey fabrics, wall coverings and rigid form is used in curtain tracks, plumbing fittings, sheet and tile form and used as used inhibitor on kitchenware articles.

Cleaning procedure:

1) Plastic surfaces are easy to clean and maintain.
2) Daily damp dusting should be done since plastics attract dust due to static electricity.
3) Light soilage can be removed by wiping with warm solution of synthetic detergent, followed by rinsing and drying.
4) Never rub plastics with dry cloth as this increases their static electricity and makes them attract more dust.
5) Textured surfaces need mild scrubbing with a soft brush; Stains should be removed by rubbing with cloth soaked in methylated spirit.
6) Where plastics come in contact with food such as in refrigerators, a solution of 9ml sodium bicarbonate to 300 ml of water should be used for cleaning.

Precautions in maintaining plastics:

- Do not use harsh abrasives.
- Do not buff with a dry cloth.
- Do not drag heavy objects over plastics.
- Do not expose to direct heat, such as from cigarette butts, hot plates and so on.
- Do not apply strong acids or alkalis.

CERAMICS: Ceramics are made from sand and clay in various proportions. It is then baked. Ceramics are glazed i.e coated with a glass like materials. Unglazed ceramics are highly porous and have an absorbent surface. Ceramics are used for making sanitary fittings, drain pipes, vases, tiles and crockery.

Types of ceramics are –

- **Earthenware** is used extensively for pottery tableware and decorative objects. It is one of the oldest materials used in pottery. The clay is fired at relatively low temperatures (1,000–1,150°C), producing a slightly porous, coarse product. To overcome its porosity, the fired object is covered with finely ground glass powder suspended in water (coating of vitreous substances is glaze) and is then fired a second time. Faience, Delft and majolica are examples of earthenware.
- **Stoneware** clay is fired at a high temperature (about 1,200°C) until made glass-like (heating and rapid cooling vitrified). Because stoneware is non-porous, glaze is applied only for decoration. It is a sturdy, chip-resistant and durable material suitable for use in the kitchen for cooking, baking, storing liquids and as serving dishes.
- **Porcelain** is a very hard, translucent white ceramic. The earliest forms of porcelain originated in China around 1600BC, and by 600AD, Chinese porcelain was a prized commodity with Arabian traders. Because porcelain was associated with China and often used to make plates, cups, vases and other works of fine art, it often goes by the name of 'fine china

To make porcelain, small amounts of glass, granite and feldspar minerals are ground up with fine white kaolin clay. Water is then added to the resulting fine white powder so that it can be kneaded and worked into shape. This is fired in a kiln to between 1,200–1,450°C. The high silica content of porcelain causes it to fuse and vitrify at high temperatures. The reaction is similar to what happens while making glass. Thus porcelain is usually shiny and nonporous.

Bone china – which is easier to make, harder to chip and stronger than porcelain – is made by adding ash from cattle bones to clay, feldspar minerals and fine silica sand.

Manintenance challenges:

Ceramics are prone to cracking and chipping. Crockery must have rolled edges to give it some additional strength and prevention of chipping.

Cleaning procedure:

Ceramics should be handled with care during cleaning since they are easily cracked and chipped. Extremely hot or extremely cold temperatures should be avoided. Warm water and synthetic detergent solution is best for cleaning ceramics. They should be rinsed thoroughly and dried with a lint free cloth. Persistent stains may be removed with a damp cloth and little sodium bicarbonate solution applied.

WOOD

Wood is obtained from trees and is hard but porous in nature. It is used because of its appearance, resilience, cost and insulating properties. However, being porous material, it absorbs not only liquids but also dust. It is prone to fungal attack and pest infection. Regular inspection and maintenance are required for them to withstand regular wear and tear and to maintain it's appearance.

Types of natural wood

a) SOLID WOOD

Hard Wood	**Soft Wood**
Obtained from deciduous trees (trees have broad flat leaves and shed them seasonally)	Obtained from coniferous trees (trees have needle like leaves and retain them all the year)
Has short fibres less likely to splinter, swell or dent.	Has longer fibres
Darker in colour	Lighter in colour

More Expensive	Comparatively cheaper
E.g. Teak, Mahogany, Walnut, Oak	E.g. Pine, Dell, Fir
It is strong and is used for floors (strips, board, block, parquet, mosaic) furniture, wall panelling, kitchen or restaurant wares.	It is used for construction of furniture, subfloors, joints, ceilings, broom handles etc where wood is covered up or out of public view.

b) WOOD BOARDS: These are less expensive as compared to solid wood items. The most commonly used ones include: -

- Plywood – It is made by bonding together a number of thin sheets (piles) of wood (usually hardwood) in such a way that the grain of one sheet lies at right angles to those on either side of it. It can be bent to any shape during manufacture and may have as many as nine piles. It's very strong and maybe covered with plastic laminate or a hardwood veneer.
- Chipboard – It is used extensively for worktops, wardrobes, chests of drawers, etc. and nearly always has a wood veneer or plastic laminate. It is heavy and strong but flexible. It is made by mixing wood chips with a synthetic resin adhesive.

- Hardboard – It is more flexible than chipboard and much thinner. Made from compressed brown fireboard, it is smooth on one side with a mesh texture on other. Hardboard is used as a backing for wardrobes, base of drawers, doorpanels, backing for pictures, base for floor tiles, etc.

- Blockboards – This consists of strips of wood between veneers. The inner strips of wood are fairly thick (upto 30 mm) making it a strong material usually used for making shelves and table tops.

Wood products are nearly always faced with a plastic laminate, sunmica, formica or wood veneer. Hence they should be cleaned according to their outer surface. However all of them will deteriorate if excessive amount of water is allowed to penetrate.

c) WOVEN STEMS - CANE, WICKER AND BAMBOO

These are names given to items made from thick grasses (bamboo), palms (cane), willow sheets (wicker). They have similar characteristics to timber products but are usually woven or plaited into chairs, tables, headboards, etc. They are easily damaged and regular cleaning is necessary. Cleaning includes brushing or vacuuming everyday and wiping approximately once a week with a solution of warm water and washing soda or solution of 5ml borax in 50-ml water. Both methods should be followed by rinsing with cold water in strands. Oil or wax polish maybe applied to polished surfaces. Items used for food items should not be polished e.g. breadbaskets.

d) CORK It is obtained from bark of trees. It is used in the form of tiles or strips in varying width. It is extremely porous and will easily crumble, dent, burn and stain. Its high porous property also means that it has good insulating properties. It is ideal for notice boards and bathmats, but is also used as floors and walls. Various forms of cork are – Natural, Resin sealed, Waxed, Vinyl coated.

Cork floors are made from granulated cork moulded into blocks and then subjected to high pressure and temperature. Natural resin is used to bind the granules. The blocks are then cut into tiles of requires size and thickness (usually 0.5-1 cm). It is used in offices, corridors

PROTECTING WOOD SURFACES: Unprotected wood surfaces will absorb moisture, which causes the grains to swell and so creates gap into which dirt and germs can fall and become trapped when it dries. Liquids such as coffee and wine leave a stain on the surface, which is difficult to remove, and scratching is difficult to avoid, particularly on floors. The following are the most commonly found methods of protection and maybe referred to as *wood finishes*.

e) *Cellulose lacquer* – this is a fairly durable matt applied to solid timber furniture during manufacture. It should be dusted and wiped with a damp cloth and then dried with a soft one. Cream or spray polish may be applied to give a gloss finish. Heat, water and solvents will cause damage.

f) *French polish* – This is also easily damaged by heat, water and solvents. Deterioration is caused by light and atmostphere in general. French polishing is produced by rubbing the solid wooden surface with a solution of Shellac (a dark red resin) and methylated spirits. It should be dusted daily and polished in the way of the grain. Occasionally cream, liquid or paste polish maybe applied to remove light soiling and improve the gloss.

g) *Oil* – Solid wooden furniture can be given a matt protective finish by rubbing the surface with a mixture of oil (usually linseed oil) and resin. This process gives very little protection although it will help to reduce the absorption of water. Daily dusting is essential. Marks can be removed by lightly rubbing with very fine steel wool. About twice a year the surface should be rubbed with a mixture of equal quantities of turpentine and raw linseed oil. Proprietary polishes should be avoided.

h) *Paint* – This is very widely used on furniture, window frames, doorframes, skirting, staircase railings, etc. Gloss paint is tougher than matt or silk and will withstand more frequent washings. All painted wood surfaces should be dusted daily and wiped with a synthetic detergent solution or solvent weekly. Spray or cream polishes can be used to retain the shine or gloss on surfaces. Heat, alkalis and abrasives easily damage paint.

i) *Resin (varnish)* – Natural and synthetic resins such as polyesters, melamine and polyurethane are used extensively on wooden furniture, window frames, skirting, floors and staircases. The finish maybe glossy or matt and is frequently applied to furniture made from chipboard. Resin is extremely tough and will resist heat, water, solvents and abrasives; but once damaged by scratching or chipping, it is very difficult to repair. Dusting should be done regularly. Cream or spray polish should be applied on glossy surface after damp wiping. Matt surface should be rubbed up occasionally using a mixture of 500ml turpentine, 100ml boiled linseed oil and 500ml vinegar.

j) *Wax (bees wax)* – This is applied on solid wood surfaces. It provides an attractive finish, exposing the pattern of the wood, but is easily damaged by heat, water and solvents. Waxed surfaces should be dusted daily and cleaned weekly with cream and liquid polish.

REMOVING STAIN FROM WOODEN SURFACES

- Alcohol stain – Polish well. If the stain persists rub along the grain with a metal polish or a mixture of linseed oil and cigarette ash.
- Burns (black marks) – Rub with metal polish. For wax or oil finishes, rub the mark hard with turpentine.
- Heat marks (white rings) – Rub with turpentine in the direction of the grain.
- Ink – Dab with vinegar, leave for 2-3 hrs, then wipe. If unsuccessful, use a matchstick or cotton wool and carefully dab with hypochlorite bleach, immediately wiping with a clean cloth or absorbent paper.
- Scratches – Mask with similar coloured wax crayon, shoe polish or liquid polish dye.
- Watermarks – Rub with turpentine in the direction of the grain. If the stain persists, rub with metal polish, followed with suitable furniture polish.

WALL FINISHES

Wall finishes provide a decorative skin to conceal building components including structural members, insulation, ductwork, pipes, and wires. Good **wall finishes** are plumb and straight. Surfaces may be smooth or textured and better **wall finishes** are durable, eye appealing, stain resistant, abrasion resistant, cleanable, safe with good insulation property and contribute to the décor of the room.

Types of wall finishes

1. PAINTS

   Paints can be applied to almost any surface provided it is free from water, grease or dust and is of sound construction. E.g. plaster must be smooth, hard and not flaking from the underlying plaster or brickwork. As wall covering paints offer a wide choice of types, colours, degrees of gloss and designs (murals can be painted). For window frames and sills, door and skirting boards, slightly glossy paint is required so that along with providing a contrast in colour and texture to the main wall finish, it acts as a protective coating, and thus contributing to décor of the room. It is relatively cheap, easily applied and cleaned and can give a textured and multicoloured effect. The only disadvantage is that it shows soils (especially for matt paints) and wall imperfections (in gloss paints) more readily than any other wall covering. The main types of paints used are:- Emulsion, Alloyd, Multicoloured, Textured or Plastic, Microporous.

2. WALLPAPER: Wallpaper is a material used in interior decoration to decorate the interior walls of domestic and public buildings. It is usually sold in rolls and is applied onto a wall using wallpaper paste.

   They may be smooth or have a textured surface effect. This may be done by superimposing or interlacing of other substance to give a rough surface, or by clever designing when visual effect gives an apparent depth (dimensional effect). Smooth finishes are more resistant to dust and dirt than rough

ones, but generally stains show more in smooth finishes. The pattern maybe floral, geometric, abstract, striped, etc. The choice depends on the room's aspect, height, size and use of room. Large patterned papers tend to overpower and tend to make the room appear smaller.

3. PLASTIC WALL COVERINGS: These are more decorative than others and some afford sound insulation. These are obtainable in a variety of sizes, designs and great price range & may require special adhesives. Many types are available like Plastic Wall Tiles, Laminated Plastic, Paper backed Vinyl etc.

4. FABRIC WALL COVERINGS: It is possible to cover the walls with any fabric but its durability will depend upon the fibre & weave used in its manufacturing. Linen & silk are applied to a paper backing and then fixed onto a framework attaché to the wall. Fabrics should not stretch or hang loosely. They bring warmth to the room.

5. WOOD PANELLING: Woods used for panelling are usually hard and of decorative appearance, they may cover the wall completely or form a dado. It may be solid or veneered and may last for years.

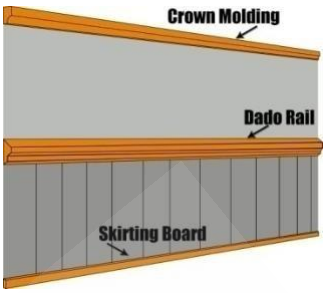
6. GLASS WALL COVERING: It can be used in the form of decorative tiles, sometimes in form of mosaics. Colored, opaque glass sheets or tiles are used as wall coverings in hotel bathrooms.

7. METAL WALL COVERINGS: It may be used for decorative purposes. Metals such as copper and anodized Aluminium are decorative and may be used for effect in areas like bars. Metal skirting boards can also be used.

8. LEATHER (HYDE) WALL COVERINGS: These are extremely expensive and decorative. They may be studded with brass and don't generally cover the complete wall surface. These are used in Restaurants or Bar or Suite rooms. it actually is. Wastage is also higher as patterns have to be cut to match each other. In addition to conventional wallpapers, now many paper-backed materials are also available, e.g. fabrics, wood, veneers, plastic, etc.

9. CERAMIC TILES:

SKIRTING VS DADO:



In architecture, the **dado** is the lower part of a wall, below the dado rail and above the skirting board. The word is borrowed from Italian meaning "die" (as an architectural term) or plinth. Dados are 4 feet or more in height , in baths, WCs and in Staircases, on walls, made of glazy materials like glazed porcelain/vitrum tiles. In staircases, even synthetic enamel paints are also used. In staircases , dados protect the walls from frequent human touches and in Bath and W.C, it protects the plastered walls from water splashes during washing and bathing.

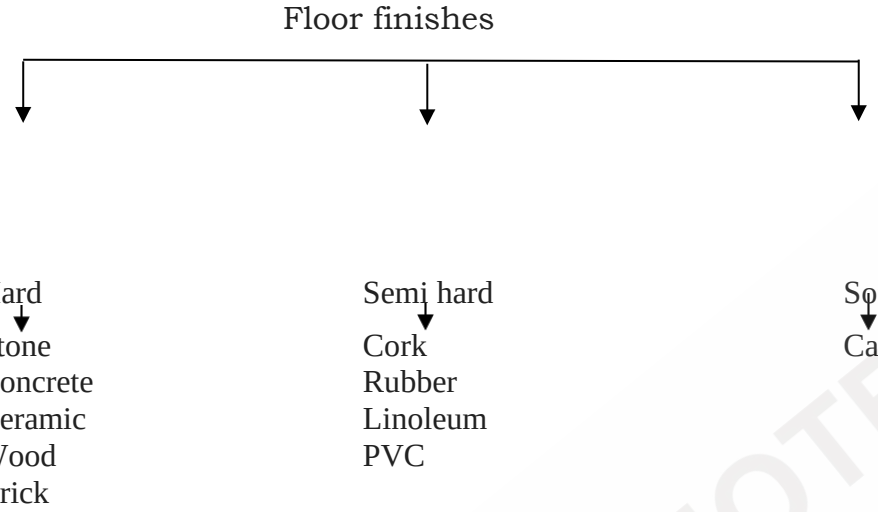
Skirting is usually around 6inches high around floors and normally made of same design and material as that of the floors. Primarily to protect walls daily from floor mopping and minor spillages on floors.

FLOOR FINISHES

Flooring is the general term for a permanent covering of a floor, or for the work of installing such a floor covering. **Floor covering** is a term to generically describe any finish material applied over a floor structure to provide a walking surface. Both terms are used interchangeably but floor covering refers more to loose-laid

materials. Floor finishes are chosen keeping in mind aesthetic appeal, comfort, durability, life expectancy, ease of cleaning, safety and cost.

Classification of floor finishes –



➛ **HARD FLOORINGS/FINISHES:** Are :

i. Durable, but noisy except for some wooden flooring,
ii. Cold in feel,
iii. Vermin proof,
iv. Fire retardant and
v. Easily cleaned as compared to other floorings.

TYPES OF HARD FLOORINGS:

1. STONE FLOORINGS: Is a good choice of flooring for natural appearance and indefinite life. Are resistant to wear, water and most cleaning chemicals. Are very heavy & must be laid on solid concrete sub floor. The most commonly used are: **Marble, Slate, Quartzite, Sandstone, limestone and granite.**

2. **CONCRETE FLOORING:** This material is good for areas that take hard wear as resistant to chipping & cracking, heat, insects and rot. Concrete is a mixture of CEMENT & various FILLERS like sand, gravel &crushed stones. First mixed in dry form & then water is added to form stone like material.

Suitable for exteriors like patios but some like concrete tiles and terrazzo are also suitable for indoor use. Various types of concrete floorings are:

GRANOLITHIC CONCRETE: Consists of GRANITE CHIPS set in cement. Used for basements corridors, storerooms, stairways and laundry areas.

TERRAZZO: Consists of MARBLE or other decorative chips set in cement. Is laid in situ or as pre-cast tiles where marble pieces may be larger. Used for entrance, cloakrooms, staircases etc.

3.**VITREOUS/CERAMIC FLOORINGS:** Made from clay product and fired in furnace to produce hard, stone like quality. Resist chipping, scratching, heat, acids, water, oils and insects.

Various types of ceramic floorings are:

GLAZED TILES/CLAY FLOOR TILES: Available in various shapes, sizes, colors and patterns. Tessellated tiles are small ceramic tiles used as mosaics and are highly decorative. Used in luxurious bathrooms and patios.

QUARRY TILES: Made from blend of clays, compressed & baked at very high temperature. Used in cloakrooms, kitchens, canteens & any place for storage & preparation of food. Pavers are used in driveways.

TERRACOTTA TILES: Unglazed, hard baked tiles, made from hand formed clay. They are porous, so lined with linseed oil sealant.

4. BRICK:

a) Different from terracotta only in shape and thickness, material is same.
b) Used in walkways and patios.

5. **WOOD FLOORINGS:** Most beautiful floorings, made from hard woods like oak, teak, maple, walnut etc. They have good appearance, poor conductors of heat & good insulators. However they get scratched & get splinter with dragging of heavy articles. Various types of wood floorings are: Stripwood, Block wood and Parquet (rectangular pieces of wood less than 10mm thick). Soft wood is used for subfloors.

TYPES OF SEMI- HARD FLOORINGS:

1. CORK FLOORING: Cork floors are made from granulated cork moulded into blocks and then subjected to high pressure and temperature. Natural resin is used to bind the granules. The blocks are then cut into tiles of requires size and thickness (usually 0.5-1 cm). It is used in offices, corridors

2. RUBBER FLOORING: Rubber flooring is a specialty flooring option designed to add padding and spring underfoot. Its unique qualities and style options make it a more versatile flooring option than you might initially think. From gyms to bathrooms to kitchens to playrooms, rubber flooring is a great choice for many spaces.

3. LINOLEUM FLOORING: Linoleum, also called Lino, is a floor covering made from materials such as solidified linseed oil (linoxyn), pine resin, ground corkdust, wood flour, and mineral fillers such as calcium carbonate, most commonly on a burlap or canvas backing. Pigments are often added to the materials to create the desired colour finish. It is highly durable therefore it is popular in high traffic areas, commercial buildings

and areas in which children are prone to play. Since linoleum flooring expands and contracts, it can be damaged when installed in an area where there is a lot of moisture such as steam from a shower.

3. PVC FLOORING: Commonly known as "vinyl," poly vinyl chloride (PVC) is made into a variety of flooring products, including many product lines with a faux wood grain appearance. It is made from a plasticized PVC formulated for use in homes and businesses. PVCis impervious to water and is known for its long-wearing durability. It requires low maintenances, is long lasting, water resistant, inexpensive and easy to install. However, it cannot be repaired, is affected by chemicals and is known to produce certain volatile chemical harmful for health.

TYPES OF SOFT FOORINGS: A carpet is a textile floor covering typically consisting of an upper layer of pile attached to a backing. We will learn more about it in forthcoming semesters.