29 Finishes

KEYWORDS

abrasive
applied finish
arris
denibbing
finish
lacquer
microporous
scraper

The presentation of any piece of work is very important. Giving a project a good ov appearance will involve some sort of finish.

The purpose of the finish

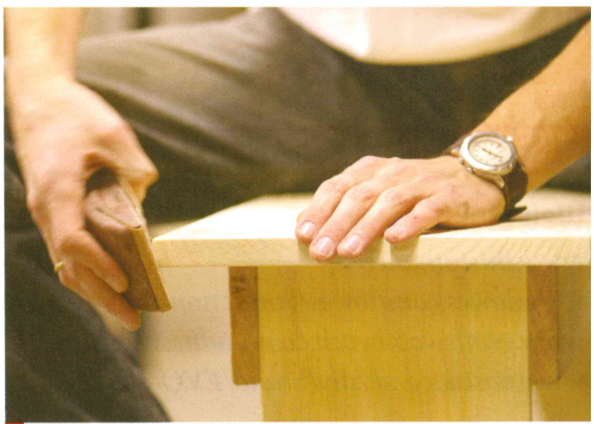
- Protects the wood from wear and tear
- Prevents decay, e.g. fungus, insects
- Provides a nice finished surface
- Enhances colour of natural wood or changes the colour (paint or stain)

Factors affecting the choice of finish

- What is the function of the item?
- Where is it located (indoors or outdoors)?
- Is it in a damp place like a bathroom?
- Is the piece to have a colour or stain?
- Are there safety considerations, e.g. a child's toy or food utensils?

Finishing an item takes two stages:

1. Prepare the surface (ensure that this is done properly)
2. Apply the selected finish, such as varnish or paint



Surface preparation is the key to a good finish

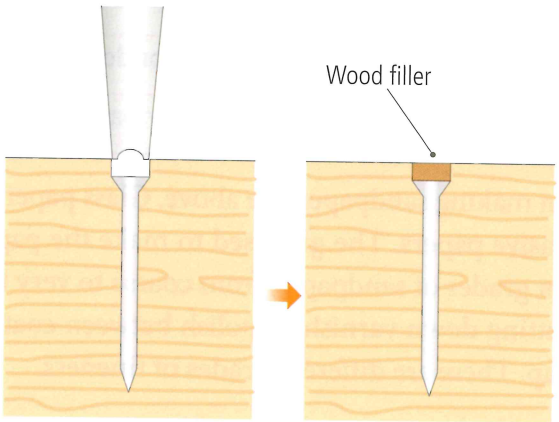
Surface preparation

Before a finish is applied, surfaces must be clean and smooth. Use planes, cabinet scrapers and sandpaper to create smooth surfaces.

Stages in preparing surfaces

1. Remove pencil lines.
2. Use a scraper to remove scratches and marks.
3. Punch nails and pins.
4. Fill nail holes and small cracks using wood filler.
5. Use sandpaper to smooth surfaces. Start with 100 grit (medium) sandpaper and then use 180 grit and finally 320 grit (very fine).
6. Sand end grain. Always sand with the grain to avoid scratching the surface.
7. Brush off all dust or use a tack cloth.

Cabinet scraper in use



Nails are punched below the surface and the holes are neatly filled

Filler

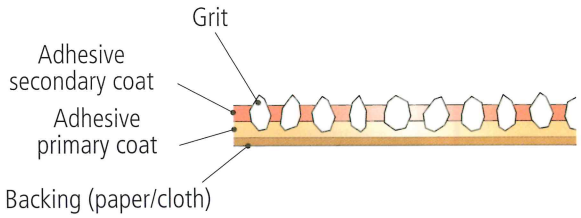
Wood filler is a soft paste that is pressed into small cracks and holes. It is sanded clean and it dries to form a hard filling. It comes in a tube or a tub and there are many types available in different shades to match woods of all colours.

Take care to clean off excess filler and wipe with a damp cloth because, when it dries, it can cause staining under varnish and other finishes.

Wood filler

Sandpaper (glass paper)

Sandpaper (glass paper) or **abrasive** paper is made by bonding an abrasive grit to a backi paper, card or textile. Cloth backing is common in belts for the belt sander.



Composition of sandpaper

The size of the grit is printed on the back of the sandpaper

Grit size	
Coarse	40–60
Medium	80–120
Fine	120–180
Very fine	180–320

Types of sandpaper	
Glass paper	Crushed glass bonded to paper
Garnet paper	Semi-precious stones bonded to paper
Aluminium oxide	A hard and tough abrasive bonded to car
Silicon carbide	A very hard grit (wet and dry paper)

There are a number of abrasive grits used in making sandpaper, see above. Glass paper i cheapest and least hard-wearing of these abrasive papers. The grit used to make the pap graded through a sieve to achieve the different grades of sandpaper, from coarse to very fi

Wire wool or steel wool is also used for cutting down varnish or polish between coats similar to household pads but without the soap. There are different grades of fineness.

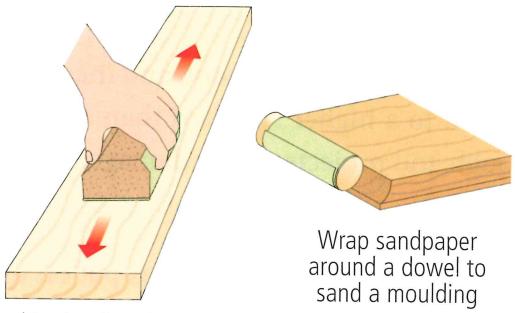
Steel wool

Sanding

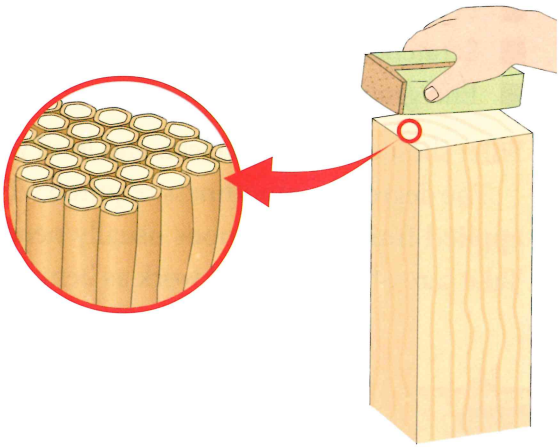
Sandpaper is wrapped around a cork block sanding wood.

Use a cork sanding block to remove any scratches. A cork sanding block is best, be it wears more evenly and the abrasive clog easily. Use a dust mask when sanding. V using a sander, do not sand too much, rounds over the edges.

- Always sand in the direction of the grain
- Any little scratches will be highlighted when a finish is applied
- End grain can be sanded in any direction and must be made smooth



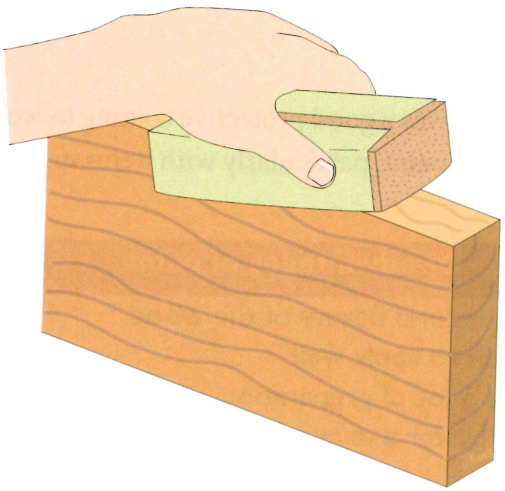
Always sand with the grain

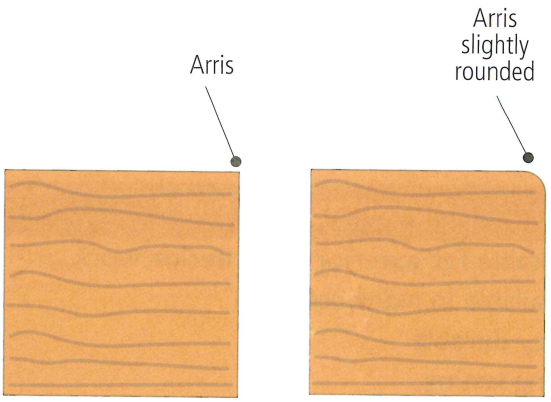


End grain can be sanded in all directions as the end the cells have no direction

When the sanding is finished you will notice the edges are quite sharp. This sharp edge is known as an **arris**. It is best to remove the sharp edge because it is damaged easily. The arris is removed by giving one or two passes of the sandpaper along it.

Sand the inside of boxes or carcases before they are glued, as it is difficult to sand into the corners afterwards. Take care not to sand joints too much before gluing, as they may become loose as a result.





Sharp edges are removed with a light pass of sandpaper

After proper sanding:

- Surfaces are clean, smooth and level
- Pencil lines are removed
- Scratches and blemishes are removed
- End grain is smooth

Filler should be sanded clean and level with the surface.

The degree of smoothness required will vary according to the type of wood and the cho **applied finish**. Hardwoods usually need to be finished to a higher standard than softw Take care of your sanded work as benches can be rough and projects can be damaged.

Solvents/thinners used in finishing

Applied finish

An applied finish is a coating or covering that is put on t wood for protection, and to improve the appearance of the

Finishes are made from chemicals or oils, which are mix a liquid medium. The medium is usually a solvent such as spirit or water and it allows the finish to cover the piece e

In oil finishes, such as Danish oil, the oil soaks graduall the wood and eventually dries.

The solvent in paint and varnish evaporates leaving a fi finish on the wood which forms a protective skin.

Brushes used to apply water-based finishes are cleaned hot soapy water, while brushes used with oil-based varnis paints are cleaned with white spirit. Always read the instruc on containers of finishes and cleaners before use.

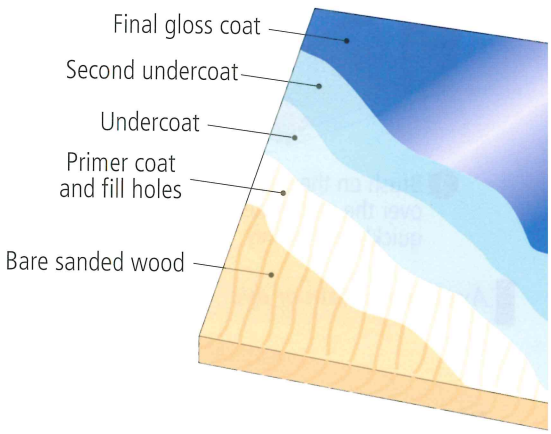
Paint

Paint is a good finish that is available in many colours. It gives a good protective coating to metal and other materials. It is important to use lead free paint, particularly with items ma children.

Advantages of paint	Disadvantages of paint
Suitable for exterior and interior work	Hides natural beauty of the wood
Available in many colours	Difficult to apply well
Very durable	Needs a lot of preparation
Long lasting	It can blister and crack if poorly applied
Easily cleaned	
It covers scratches and imperfections easily	

Painting woodwork

- Prepare surfaces well
- Seal knots with wood knotting
- Apply a primer coat(s) on all surfaces
- Fill cracks and small holes and sand lightly
- Apply one or two coats of undercoat to cover the piece
- Sand lightly before recoating
- Apply a final finish coat, often gloss
- Allow each coat to dry before applying the next



Stages in the painting process

Primer

Priming paint is special light paint that acts as a base for the undercoat. It seals the wood and gives a key for the next coat. Cover all surfaces well with the primer, including holes and small cracks.

Undercoat

Undercoat is a second paint that has a dull matt finish and provides the key for the final finish coat. The colour chosen must match the final coat. It is applied to cover the base colour, so that the final coat is a uniform colour.

Finish coat

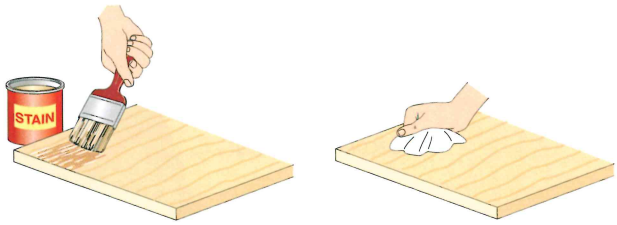
The finish coat is often gloss paint, but you can also use a matt or satin finish. Apply the final coat carefully. It must be free of marks and brush marks, dirt, etc. The final coat dries quite quickly and becomes 'tacky' so work must progress quickly. Remove drips and runs. At each stage, apply the paint in a thin film so that runs do not develop.

STAINS

Stains are dyes that colour the wood. The pigment or dye is dissolved in a solvent (spirit-based) or water (water-based). They are used to enhance the colour of wood, not to protect it.

Selection of staining materials

Most stains are spirit-based and the dye is left in the wood when the spirit evaporates. W based stains are available, but they tend to make the grain swell and take longer to dry out. N stains come in powder form and are dissolved in spirit or water.



1 Brush on the stain over the whole piece quickly and evenly

2 Wipe off excess with a clean, lint-free cloth

Applying a stain or dye

Applying stain

Getting an even coat of colour is when putting on a stain. Brush stain on to the wood liberally, cov the surface. Then use a clean dry to wipe away any excess stain. ensures that there isn't any overla any one surface which would cau uneven colour.

A selection of varnishes

VARNISH

Varnish is a clear protective coating. Most mo varnishes are made from polyurethane resin w spirit-based medium, although water-based varn are also popular. Water-based varnishes are environmentally friendly and the brushes are cle in water.

Varnishes are usually applied using a brush, cloth also gives very effective results.

There are coloured varnishes available. Varnish comes in spray cans, which are useful for smaller i

As with paint, varnish comes in gloss, satin or finish. There are varnishes that are suitable for in or exterior work.

Yacht varnish is very durable and is used in boat building.

Varnish is used on furniture, garden furniture, doors and windows. It is widely used in p work.

Advantages of varnish

- Resistant to water
- Resistant to scratches
- Resistant to heat
- Easy to clean

Applying varnish

Brush varnish on to smooth wood surfaces. Build up the finish in thin coats (usually three is enough). The varnish soaks into the fresh wood and causes it to swell slightly. When the work is coated, check it for drips or runs of excess varnish, which should be brushed out. Allow each coat to dry overnight before applying the next. Sand the surfaces lightly between coats. This is called **denibbing** and it smoothens out the slightly rough texture left as the varnish dries.

Varnish applied with a brush

Varnish applied with a cloth

MICROPOROUS FINISHES

Microporous finishes are like a breathable skin on the wood. They protect the wood from rain, but also allow any moisture in the wood to evaporate. This lets the wood breathe naturally. The finish should not flake or blister.

Microporous finishes are an environmentally friendly product; both varnishes and paints are available. They are used for outside work, e.g. sheds and fences.

Danish oil

Danish oil is made from tung oil. The oil is applied usually with a cloth and rubbed well into the wood surface.

Applying oil

- Apply with a cloth, working the oil well into the grain
- Apply two or three coats and leave to dry overnight
- Smooth down any rough surfaces using light sandpaper
- Apply another three coats of oil
- Gradually build up the finish using the above process

Advantages of Danish oil

- Easy to apply
- Does not raise the grain of the wood
- Gives a nice lustre to the wood
- Re-oil as required
- Suitable for outdoor use

Safety

Always dispose of cloths carefully as oil-based finishes can ignite spontaneously.

Linseed oil and teak oil

Linseed and teak oils are also used on wood. They are rubbed on to wood just like Danis
They take longer to dry than Danish oil. Oils darken wood and bring out the grain patter
the wood.

A selection of finishing oils

Wax

Wax finishes polish the wood to a nice s
There are a number of waxes on the ma
Beeswax forms the main ingredient for
wax polishes.

Wax finishes come in

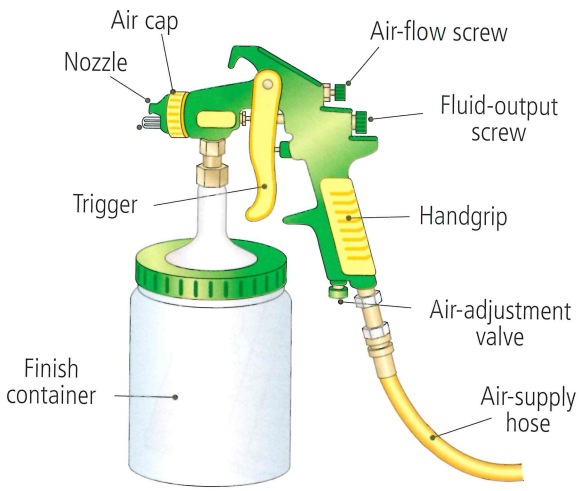
Applying wax

- After surface finishing, seal the wood with a wood sealer
- Use a clean, dry cloth to apply the wax and rub well into the wood
- Build up a number of coats before letting the wax dry for a while
- Polish the surface to bring up a shine
- Repeat the process to build up to a high gloss shine
- Wax is a soft finish and is not water-resistant so it is only for indoor use

Advantages of wax	Disadvantages of wax
Easy to apply	Not for outdoor use
Does not raise the grain	Takes time to build up a shine
Gives a soft lustre/shine	Finish is soft and easily damaged
Easily renewed	Not heat or water-resistant
Allows a polish to gradually build up	
No sanding between coats	

LACQUER

Lacquer is a tough, durable finish, which is applied to furniture and other wooden items. It is sprayed on using a spray gun and air compressor. Lacquer is mixed with volatile chemical thinners that evaporate quickly. This means that the finish, which is applied in two coats, is completely dry and hard in a short time after it has been sprayed. This is a great advantage in the furniture industry.



Spray gun

Applying lacquer

Special spraying equipment is needed to apply lacquer. Spraying must be done in a special spray area with a proper extraction system, as the chemical solvents in the finish are harmful if inhaled. A full-face respirator must be used when spraying lacquers.

- First seal the wood use a sanding sealer
- When dry denib the sealer using fine sandpaper
- Spray on final coat of lacquer

French polish

French polish is a very high-quality, traditional, hand-applied finish. The polish is made by dissolving shellac in methylated spirits. Shellac is a crust surrounding an insect that infests trees in countries such as India.

In the past, French polishing was a separate trade. There are various types of polishes for different purposes. Polishers would mix their own polish recipe.

Because it is a very fine finish, the surface preparation is very important. A very smooth surface is required and the grain is often filled with special grain filler. The grain filler is rubbed on, left to dry and then polished off (burnished).

Apply the polish using a special pad (called a rubber) made from cotton wool wrapped in clean cotton. Load the pad with polish and then squeeze out any excess polish. Then rub the polish carefully on to the wood.

Applying French polish

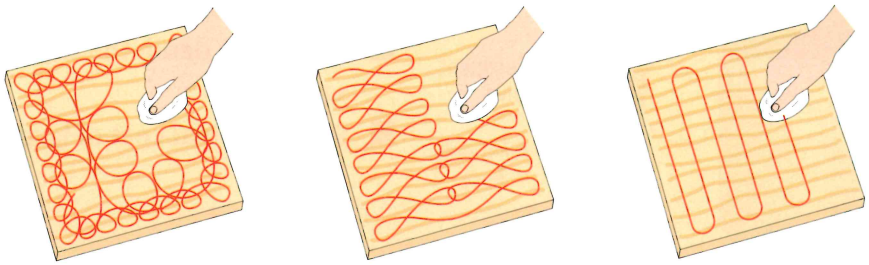
There are three stages in applying the polish:

- Bodying in
- Building up
- Spiriting off

French polish

Bodying in

- Use the loaded pad to put on the polish
- Use a circular motion, beginning on the outside of the piece and working towards the centre
- Cover the entire surface with polish
- Put several layers or coats on at a time
- Leave the polish to dry overnight



1 Cover the panel with circular strokes

2 Continue with figure-eight strokes

3 Finish with straight, parallel strokes

Applying French polish

Building up

- Denib the piece using very fine wire wool before applying several more coats of polis
- Repeat this process until a soft shine is built up on the piece over several sittings
- Usually about five coats are applied at a sitting
- Keep the pad moist overnight in a sealed jar with a little methylated spirit in the bo
  This prevents the pad becoming hard