Design & Manufacture

Homework 29

Wood Finishes

Wood has a **finish** applied for the following reasons:

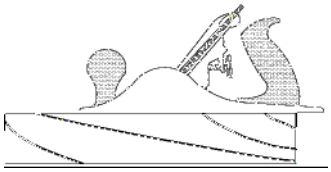
- To stop the wood from absorbing moisture, so that it is less likely to become stained and also less likely to warp.
- To protect against rot and insect attack.
- To improve the appearance of the wood's surface.

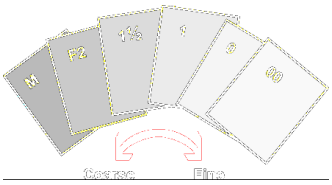
Preparation

The wood must be made clean and smooth before the finish is applied.

Planing

A smoothing plane with the blade set to cut tissue thin shavings will give the smoothest finish.

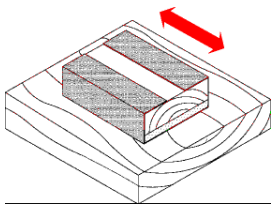




Glass-papering (sanding)

Glass paper comes in various grades of coarseness:

A coarse paper should be used first, then a medium paper and finally a fine paper.



Always Sand in the direction of the grain.

The glass paper should be wrapped around a sanding block. A proper block is made of cork or has a cork layer stuck to the bottom, cork is a soft springy wood and can help stop the glass paper wearing away too quickly. However, a piece of waste wood can be used instead.

Note: Always sand backwards and forwards in the direction of the grain. Any sideways or circular movement will put deep scratches in the wood that are difficult to remove.
If you are using an electric, hand held sander, move the whole machine only in the direction of the grain.

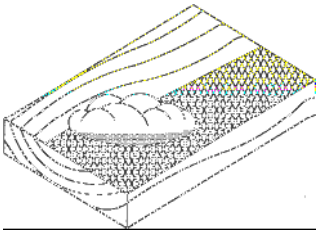
Preservative

Wood used outside or in damp conditions is likely to rot unless preservative is applied. Wood can be purchased that has had preservative forced into it under pressure (Tanalising). The preservative will last the lifetime of the wood. If untreated wood is used, it can have preservative painted or sprayed onto it, so that it soaks in to the surface. The preservative can be oil based (Creosote) or spirit based. This sort of preservative needs to be replaced every few years because rain gradually washes it out of the wood.

Stain

Stain (colouring) is used to change the colour of light woods to make them more interesting or to blend in with darker woods. It does not hide the grain. Stain is normally applied by rubbing it onto the surface with a soft clean cloth. Stain will not protect the wood so needs a finish on top. It is possible to buy a 'combined stain with varnish', this can give a very tough water resistant finish, for use inside and outside.

Apply the stain in small circular movements to even out the colour.



Varnish

Plastic based clear varnishes (polyurethane and acrylic) are sold in:

Matt finish - non shiny
Satin finish - slightly shiny
Gloss finish - very shiny

A clear varnish allows the pattern of wood grain to show through and will normally darken the wood, giving it a deep, interesting colour. It is also water and heat resistant.

The varnish can be applied with a brush (brush in line with the grain for the best finish). At least two coats are required.

i) Apply the first coat thinly and let it set fully. This coat soaks into the pores of the wood and then sets. The wood is now sealed.
ii) Use a fine grade of glass paper to lightly sand the surface because the first coat tends to make the surface rough as it sets.
iii) Apply the second coat also thinly, check for any runs or drips and let it set to a smooth finish.

Questions

1. Why is it necessary to apply a finish to wood?

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2. Describe the preparation method that gives the smoothest finish.

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3. Which grade of glasspaper would you use to complete your preparation for a finish to be applied?

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4. Describe the method you would use for sanding a wooden surface.

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5. What are the reasons for using a wood stain?

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6. In what forms can you purchase a clear varnish?

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7. Explain the stages required for varnishing.

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