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Veneering and Inlay

KEYWORDS

groundwork
marquetry

motifs
parquetry

scratch stock
veneer

Veneering involves covering wooden pieces with thin sheets of quality wood. Decorative veneered patterns and pictures can be created using combinations of various wood veneers.

VENEERS

Veneers are thin layers or sheets of wood that are cut from a log. These thin sheets come from different parts of the tree to show decorative grain patterns. Veneers are bonded to solid wood, usually a stable base of man-made wood such as plywood or MDF.

Many tropical hardwoods and other rare and expensive timbers are used for veneers. Using veneered sheets is an environmentally friendly and efficient way to use these rare woods.

Veneers are useful for laminating projects.

Advantages of veneering

- Rare woods are used effectively with little waste
- Large areas of wood are covered without the risk of splitting
- Veneers are used to make decorative patterns

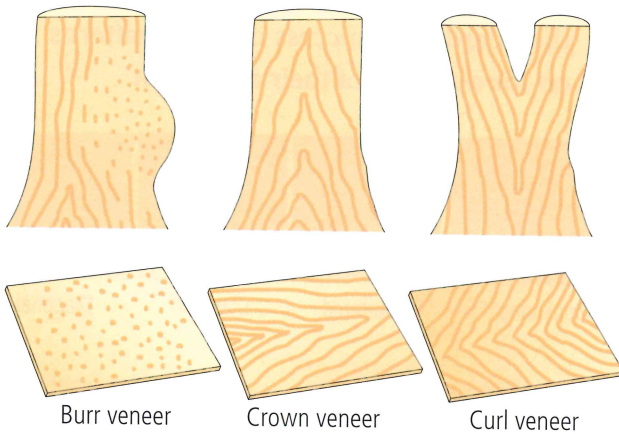
The veneer is cut from a log in thin slices or a continuous strip. The thickness of cut veneer is usually between 0.6 mm and 1 mm. The slicing method cuts veneer in a way that reveals decorative grain patterns.



Veneers are used to give an attractive finish

Many parts of the tree that would otherwise be considered imperfect produce decorative veneers.

Veneers for project work are bought in sheets. Variety packs of different veneers are available. These veneers are usually bonded to the base timber (groundwork) with impact adhesive, although veneers with a self-adhesive backing are available. This type is easily applied by peeling off the backing paper before sticking it down.

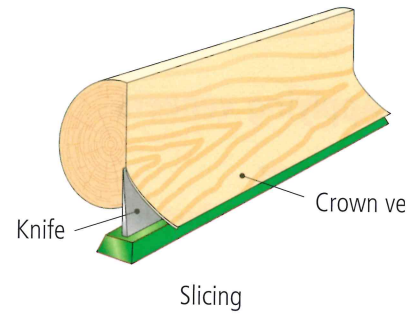
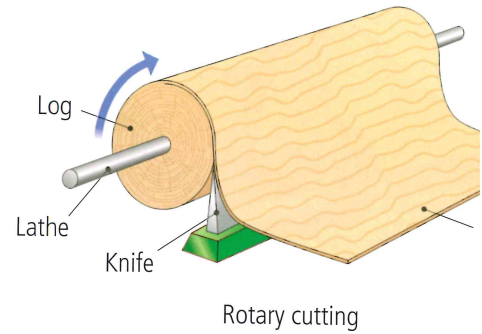


Burr veneer, crown veneer and curl veneer

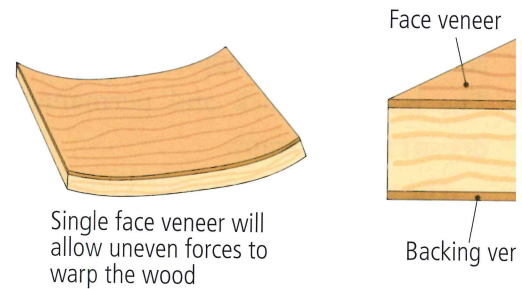
Groundwork

Groundwork is the base on to which the veneer is glued. Plywood and MDF are more suitable than solid wood for groundwork, because it may warp. To counteract any warping, a backing or balancing veneer is used on the other side of the piece. This balancing veneer is usually of the same type but not as good quality. This process is called counter veneering.

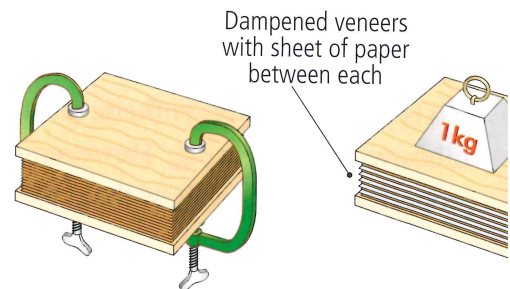
Veneers must be flat before they are applied to avoid pockets of air under the veneer. Buckled veneers can be flattened with a damp cloth and then clamped between two flat surfaces for a couple of days.



Cutting veneers: rotary cutting and slicing methods



Counter veneering prevents warping



Flattening veneers



Veneer is cut using a scalpel and a steel rule

Applying veneers

Adhesives

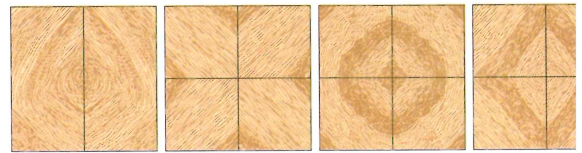
Veneers are bonded to the groundwork using glue. In the past, animal glues were most popular for applying veneers to the backing. They are still used today and can be obtained in pearl form. A veneer hammer or roller is used to press the veneer to the groundwork. Nowadays, impact adhesive is used to apply veneers to wood. The bond is quick and permanent and doesn't need cramps.

The groundwork is sealed with a film of the adhesive, which is allowed to dry. The adhesive is then applied to both surfaces to be bonded and, when this is tacky, the veneer is positioned carefully over the groundwork before bringing them into contact. Impact glues in spray cans allow an even application; they are widely available.

It is possible to use synthetic resin adhesive and casein adhesive for veneering. However, the pieces must be properly cramped to allow them to set.

Matching

Simple and effective patterns can be made by matching pieces of veneer on a piece of wood. The veneers are cut using a sharp craft knife, scalpel and steel rule to give a straight edge. These veneers are then arranged in symmetrical patterns before they are stuck down on the groundwork. It is important to keep the lines centred and at right angles to the edge of the board. The success of these patterns relies on the accuracy of their alignment.

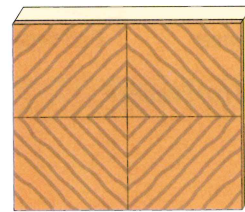


Book matching

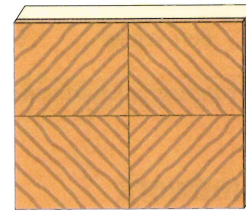
Quartered

Diamond

Diagonal

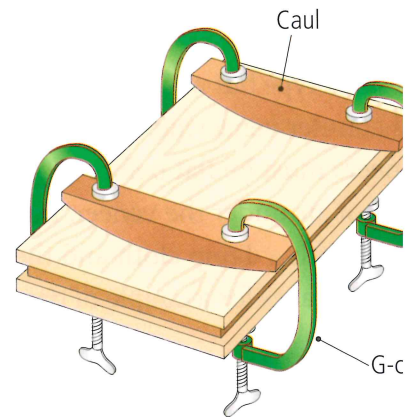


Aligned



Not properly aligned

Matching veneers



Cramping veneers

Preparation of the groundwork

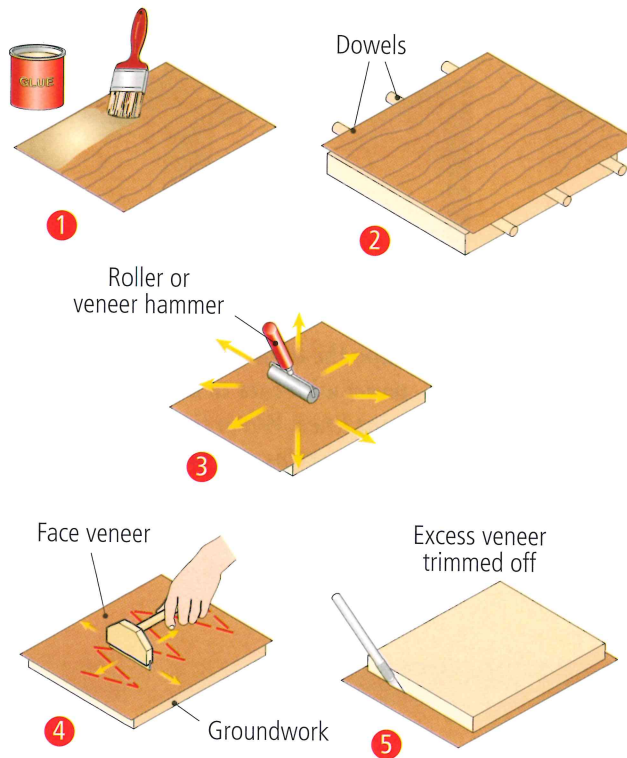
- Ensure the groundwork is flat and free of dirt and defects
- Plywood and MDF make good groundwork for veneering
- Fill and sand any defects until smooth
- To prevent the wood absorbing the glue, seal with a weak solution of adhesive before veneering begins

Procedure for veneer application

- 1 After sealing with adhesive, apply a thin film of glue to both surfaces to bond them
- 2 Position the veneer over the piece of groundwork and adjust the grain direction so that it is lined up correctly
- 3 Bond the two surfaces carefully together
- 4 Squeeze out air pockets using a veneer hammer or roller
- 5 When the glue has set, trim off the overhanging veneer



Impact glue is used for veneering

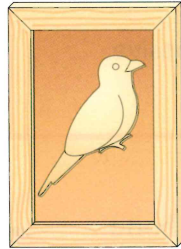


Applying a veneer panel

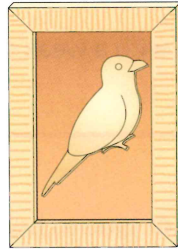


Borders

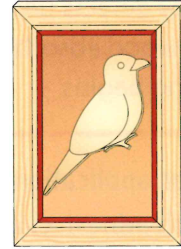
Just as pictures or photos have frames, veneered patterns and pictures can be enhanced by adding a border of veneer. Whether it is a table top or a marquetry picture, a border creates a frame



Plain mitred border



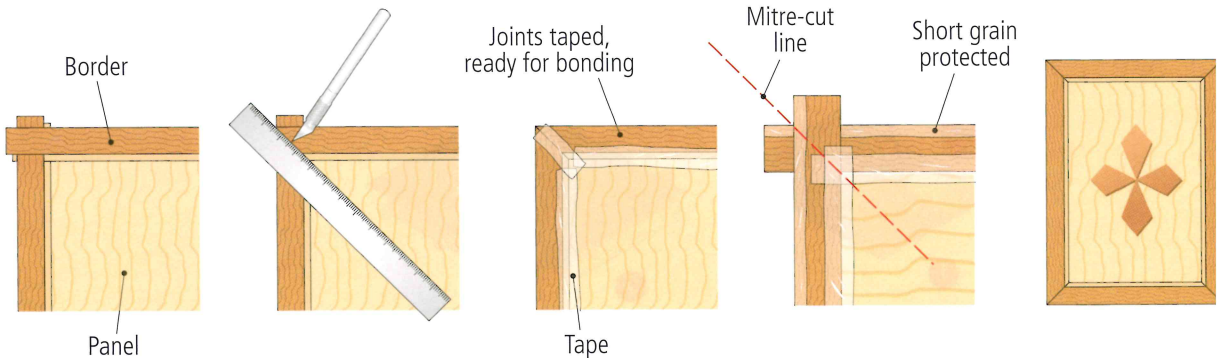
Crossbanding grain direction changed to give effect



Using a contrasting colour veneer to give effect

Using veneers to create a border

Method



- 1 Cut and match the strips of veneer. The strips should be long enough to overlap the corners.
- 2 Carefully mark and cut the mitres at the corners of the border, remove the waste veneer and tape the joints of the mitres.
- 3 Tape the border to the veneered panel with care to ensure tight joint lines. When finished the border strips will overlap.
- 4 When you are happy with the panel bind it to the groundwork

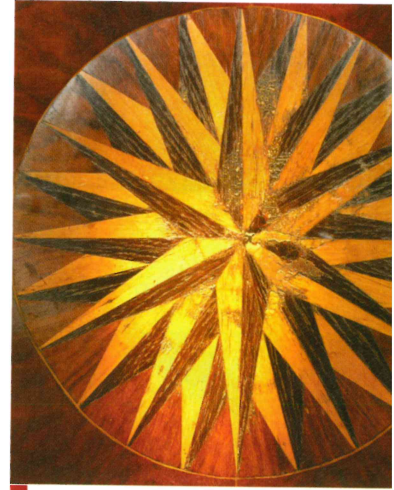
Creating a veneered border

MARQUETRY

Marquetry is the skill of creating pictures using a variety of veneers. The colours, the grain patterns and grain direction are used in an artistic way to produce beautiful results. An experienced person can produce very detailed pictures. However, simpler designs and pictures can be created successfully to begin with. There are two methods used to create these pictures: the window method and the overlay method.

The window method

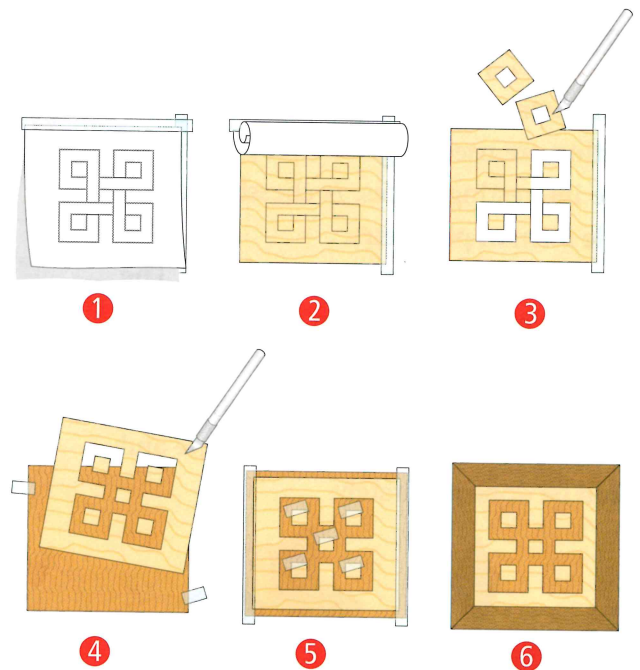
The first method, and perhaps the most popular, is called the window method. This method allows you to get the best positioning for the grain direction. The process outlined below is repeated for the different parts of the picture as it is gradually built up.



An example of marquetry/parquet

Method

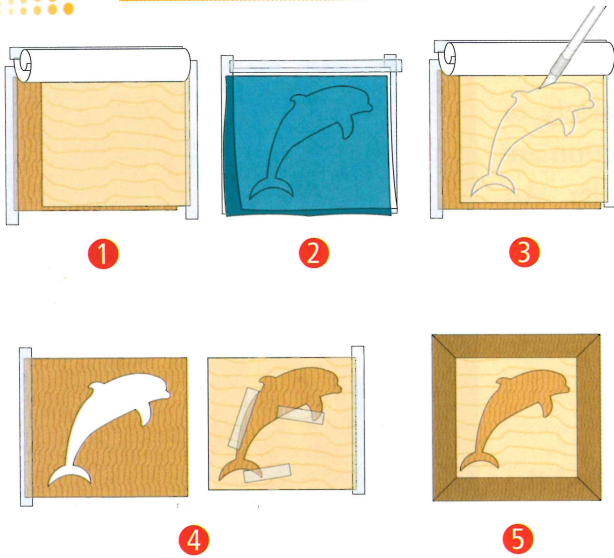
- 1 Draw the design.
- 2 Transfer the design on to the veneer using carbon paper.
- 3 Cut out the shape and remove.
- 4 Place the space over another piece of veneer lining up the grain.
- 5 Cut through the gap or 'window' to the veneer below. Tape the cut out piece into the gap.
- 6 Build up the picture and add a frame.



The window method

The overlay method

In the overlay method, two veneers are placed on top of each other. The design is drawn on the top veneer as before. The shape is then carefully cut out through both veneers. As the veneers are cut at the same time, they should match exactly. The veneers are then interchanged, taped and bonded to the groundwork. One advantage of this method is that a second picture can be made using the leftover pieces of veneer and these pieces should fit together exactly.

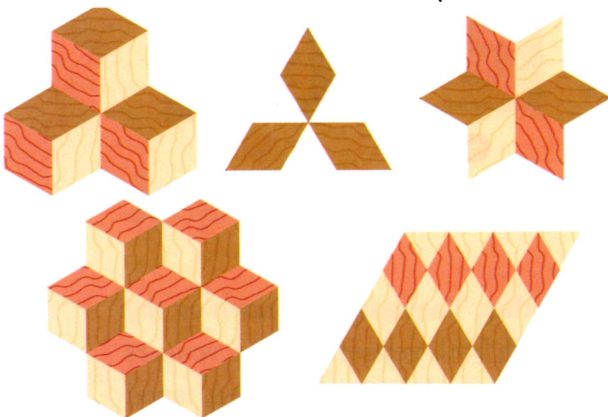


The overlay method

PARQUETRY

In **parquetry**, contrasting veneers and grain direction are used in geometric patterns to create interesting pieces. A chessboard is a simple form of parquetry.

Veneers or solid pieces are used. The pieces have a straight grain, which gives a 3D effect. When doing this kind of work, a jig (template) can be made for cutting the veneers, as all of the cuts are the same and should be done accurately.

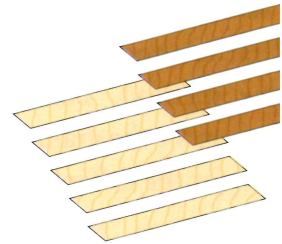


Parquetry patterns

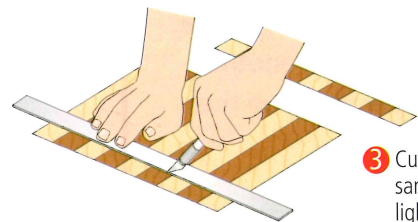
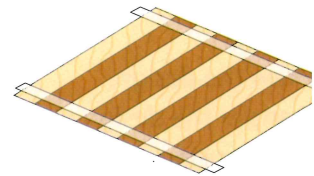
Method

- 1 Fix the two veneers to a cutting surface.
- 2 Transfer the design to the veneer using carbon paper.
- 3 Cut through both veneer layers at the same time.
- 4 The veneers are then interchanged and taped together.
- 5 Glue the veneers to the background.

- 1 Cut parallel strips of contrasting veneer – 5 light and 4 dark

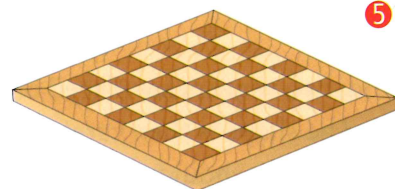
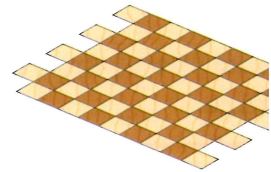


- 2 Tape together in alternate strips to form a sheet



- 3 Cut this sheet to the same width to form light and dark square strips

- 4 Stagger the joints and tape to form the chessboard effect



- 5 Tape together, apply border bond to groundwork and finish

Veneering a chessboard

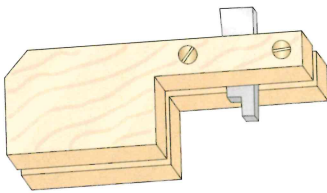
INLAYING

When inlaying, contrasting wood strips or other pieces are recessed (inlaid) into solid timber to create a decorative line effect. Patterns and motifs (repeated designs) made from veneers are also available and these too are often inserted in pieces as a focal point.

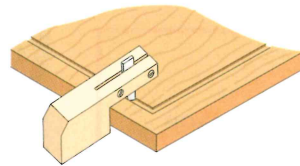
Different materials are used for inlaying, such as ivory, tortoiseshell, bone, plastics and some metals. However, wood is the most popular material and boxwood is widely used for inlaying. Boxwood is a yellow-coloured wood. Inlay strips and bandings are inserted into grooves, which are cut or scratched out of the wood using a **scratch stock**.



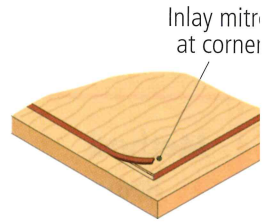
Inlay lines of contrasting woods are attached to the handle.



Scratch stock



Using the scratch stock

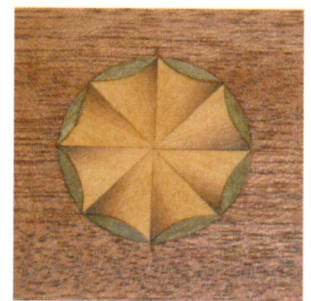


Inlay mitre at corner

The scratch stock can be made from an old hacksaw blade secured between two pieces of hardwood. Patterns and angled corners can be done by making a template, or jig, which a chisel can follow to cut the groove. The chisel is also used to cut mitres and joints in the inlay.

Bandings are lines of prepared patterned veneer that can be inlaid into solid pieces or used in making up veneered panels.

Motifs are also used as decoration. They are prepared small designs that are inlaid and they are widely available.



Veneer motifs



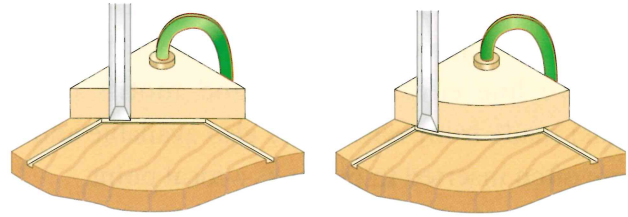
Finishing

Inlaid or veneered work may leave slightly uneven surfaces on the timber as the thickness of the pieces may differ slightly. Finishing these surfaces requires patience and care.

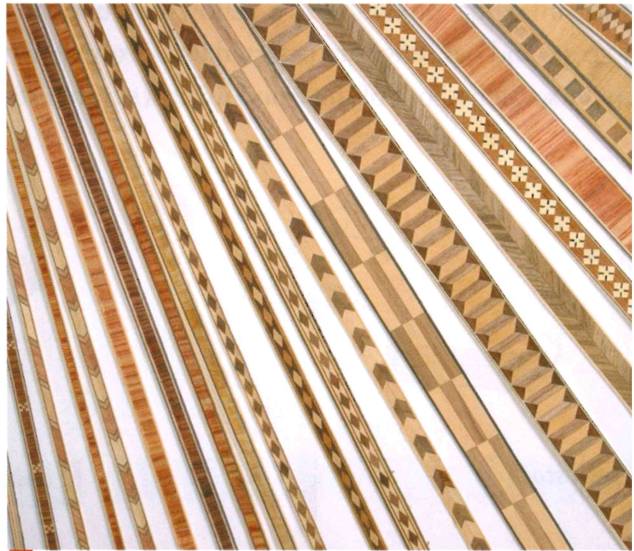
Veneers are thin so treat them with care, as it is easy to sand through the veneer to the groundwork. The choice of applied finish then depends on where the piece is to be used and on personal taste. Wax or polish is often applied, while varnish is also acceptable.

Method

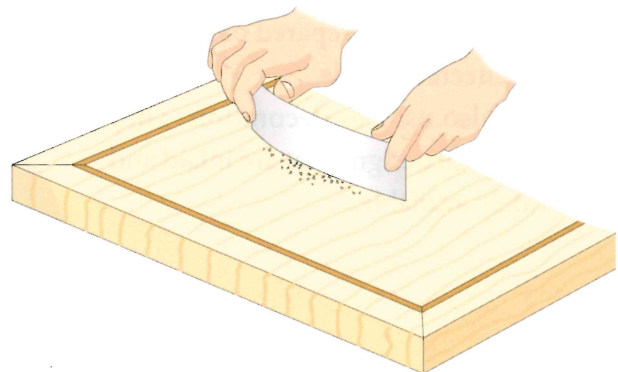
- 1 Remove any masking tape from the veneered pieces.
- 2 Smooth any uneven surface areas using a cabinet scraper or by sanding them down.
- 3 Fill any small gaps with filler.
- 4 Clean and sand the surfaces smooth with fine sandpaper.



Inlaying at corners



Wood veneer bandings

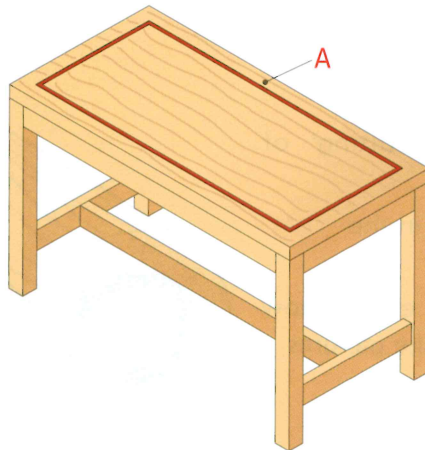


Use a cabinet scraper to remove blemishes and to smooth the grain

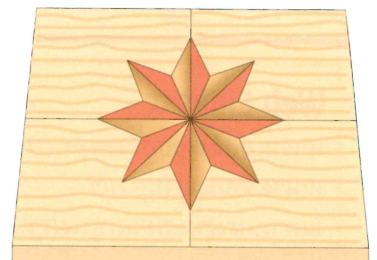


Exercises

- 1 What is a motif and where might it be used?
- 2 What is a veneer?
- 3 What are the advantages of using veneers?
- 4 Veneers are stuck down to other pieces. What are these generally called and what types of materials are used for these pieces?
- 5 What is the name of the line of wood shown at A in the diagram below?



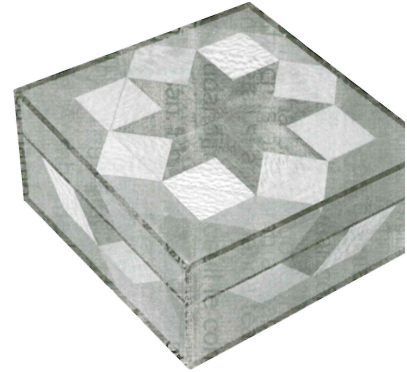
- 6 List two things that are important when bonding a veneer to a panel.
- 7 Name the glue that is mostly used in the veneering process and give one advantage of this glue.
- 8 Explain the following terms in relation to veneering:
 - Veneer hammer
 - Inlay
 - Marquetry
- 9 Using notes and sketches, explain what counter veneering is.
- 10 Why is counter veneering important?
- 11 Describe what marquetry is.
- 12 Suggest suitable woods for the veneer panel shown opposite.
- 13 Describe, using notes and sketches, how you would add a simple veneered border to a marquetry picture.



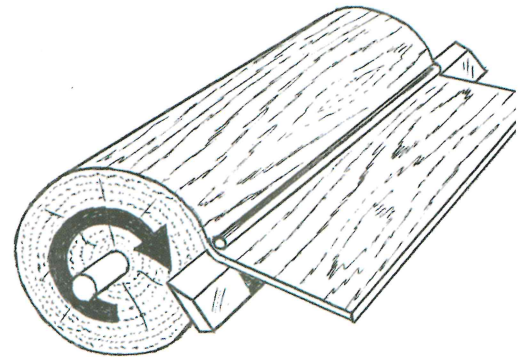


Exam Questions

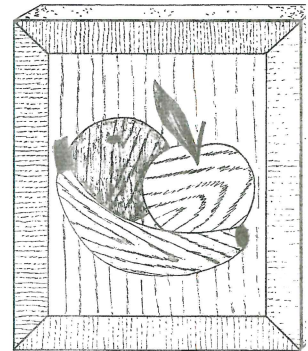
- 1 The diagram shows a veneered jewellery box.
- (a) With the aid of notes and freehand sketches, describe how to mark out and cut the veneers for the top.
 - (b) Describe, in detail, how the finished veneers would be applied to the top of the jewellery box.
 - (c) Name three types of adhesive that could be used to apply the veneers.



- 2 The diagram shows 'rotary cutting' of veneers.
- (a) Explain what is happening in the diagram.
 - (b) Using notes and diagrams, explain how veneers can be used to make pictures (marquetry).



- 3 The diagram shows a picture made using veneers applied to an MDF board.
- (a) Using notes and diagrams, describe, in detail, how veneers are cut from logs.
 - (b) The picture is to be placed on a desk. Using notes and sketches, design a suitable support.
 - (c) Explain how using veneers saves on the use of rare and expensive timbers.



Web Links

www.oakwoodveneer.com/tips.html

www.veneering.net

www.originalmarquetry.co.uk

www.redbridgemarquetrygroup.org/Tutorial_Pages.htm

www.inlay.com/marquetry/wood_inlay_part1.html