

SOURCES, ORIGINS, PREPARATION
OF NATURAL WOODS

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SOURCES, ORIGINS, PREPARATION OF NATURAL WOODS

1. WORLD DISTRIBUTION OF
NATURAL WOODS

2. PREPARATION OF TIMBER
FOR COMMERCIAL USE

3. SEASONING NATURAL WOOD

4. INITIAL PREPARATION
AFTER SEASONING

5. STOCK FORMS

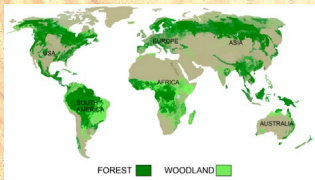
6. SUSTAINABLE FORESTS

FORESTS AND WOODLANDS WORLD DISTRIBUTION OF NATURAL WOODS

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Forests are one of the worlds most a precious natural resources. The world map below shows the distribution of forests across the world. There are three main forest types, Tropical Rainforests, Boreal Forests and Temperate Forests.

Tap the image for more information and exercises



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BOREAL FORESTS

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Boreal Forests, which extend in broad bands across North America and Eurasia. - Woods such as are Spruce, Fir, and Pine, Birch, Aspen, Willow, and Rowan are harvested from these forests. The trees are used in paper, newsprint and pulp manufacture, house building, furniture manufacture, veneer and plywood manufacture.

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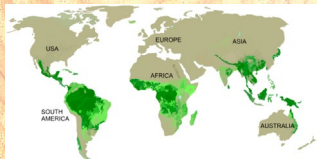


TROPICAL RAINFORESTS

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The Rainforests of South America and Africa cover approximately 6% of the earth's surface. This percentage is falling, because of deforesting due to pressure from agriculture and logging of trees. They provide a range of exotic woods including Mahogany, Teak, Rosewood, Balsa or Sandalwood, Melina and Okoume. Mahogany, a popular hardwood, is found mainly in South America rainforests whilst Teak is found in Asian and Indian Rain forests.

Tap the image for more information and an exercise



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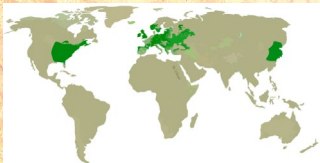


TEMPERATE FORESTS

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They consist of mainly deciduous trees (trees that lose their leaves in winter). The temperate forests are found in the Northern Hemisphere, particularly on the East Coast of North America, Central and Northern Europe and Eastern China. The woods produced from these forests include Oak, Maple, Beech and Elm. Today temperate forests are only twenty five percent of their original size. This due to human expansion, agriculture and logging of trees for timber.

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PREPARATION OF TIMBER - 1

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Mature trees are selected by a forestry worker. Only older trees are chosen, allowing the younger trees to grow to maturity. Felled trees are replaced with saplings. Consequently, the forest is sustainable (it should not run out of trees).

Tap the image for more information



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PREPARATION OF TIMBER - 2

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The tree trunks (logs) are stored / stacked in a clearing. Sometimes logs are stored in the forest until they are needed at the sawmill. This also allows some of the 'free' water content to evaporate, reducing the weight of the tree / log.

Tap the image for more information



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PREPARATION OF TIMBER - 3

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The logs are transported to the sawmill, using vehicles equipped with lifting gear.

In the Tropics, large numbers of logs are transported by floating them in rivers and allowing them to be carried down stream by the current, to sawmills.

Tap the image for more information



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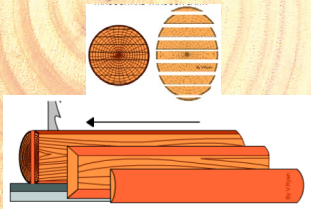


PREPARATION OF TIMBER - 4

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At the sawmill, the logs are cut into 'boards' using equipment such as circular saws and bandsaws. This is called 'conversion'. The first stage of conversion is a process called 'breaking down', which means rough sawing. The second stage is called 'resawing' and refers to more accurate / precise cutting and finishing, such as planing and further machining

Tap the images for detailed information



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AIR SEASONING

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The timber to be seasoned is stacked outside. It is normally placed in a hut / building, with two sides open to allow air to circulate. The roof and two other sides keep the timber relatively dry. The circulation of the air slowly dries the timer. However, this techniques does not give a precise moisture content. This is because air circulates freely and carries moisture, depending on the weather and the time of year.

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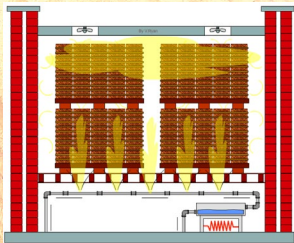


KILN SEASONING

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The seasoning time for wood can be reduced considerably through the use of a specialist kiln. A 'forced draught' kiln is seen below. Kilns are used because the process speeds up seasoning and this method can be used to accurately control the moisture content of the wood.

Tap the image for more information and an exercise



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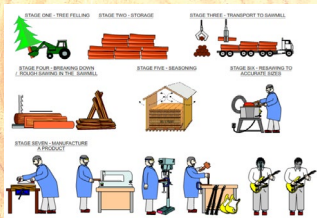


Tap the image for a 'summary' exercise relating to the preparation of timber

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This exercise starts with the felling of the tree, to rough cutting to seasoning.

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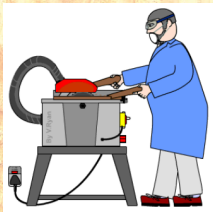


ROUGH SAWN TIMBER

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When wood is cut to a basic size on a circular saw, it is called 'rough sawn'. The edges and sides are not smooth. This is usually the first stage of preparing wood for further, more accurate work. Wood can be purchased rough sawn or planed. Rough sawn timber is cheaper. Rough sawn wood is often used on building sites, where the wood surface finish is not critical or not likely to be seen.

Tap the image for more information and an exercise



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PLANED TIMBER

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Wood boards are normally planed on a planer / thicknesser (sometimes called a combination planer).

This prepares the wood by planing the edges and sides accurately, smoothing surfaces.

This type of machine can be used to 'square' edges, so that they are straight and level.

Planed timber is more expensive than rough sawn.

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PLANING OF BOARDS

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Planing at a wood suppliers is carried out in different ways, outlined below.

PLANED ALL ROUND (PAR)

All the sides and edges are planed square, straight and level, leaving a smooth finish and ready to use.

PLANED BOTH SIDES (PBS)

Both sides are planed but not the edges. The edges are left rough sawn.

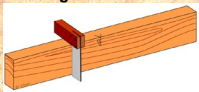
PLANED SQUARE EDGE (PSE)

One edge is planed accurately, making marking out and cutting to size more precise.

ROUGH SAWN

Has rough surfaces produced by the circular / band saw, although they are relatively straight and level.

Tap the image for more information



Tap the red button to return to the Contents page



Tap the images for more information and an exercise

BOARDS

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Natural wood can be supplied as boards. These are a rectangular section and vary in length.



SECTION



LENGTH

By V.Ryan

SQUARE SECTION

These are available in a range of measurements. A typical measurements is: 50 X 50mm x 600mm



SECTION



LENGTH

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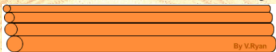


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DOWEL

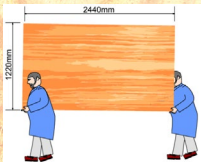
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Dowel is supplied in different sizes. 6mm diameter to 40mm is a common range



SHEETS - FULL BOARD OR HALF BOARDS

Manmade boards are available in a range of materials such as MDF, blockboard and plywood. Full boards are usually 1220 x 2440mm. Half boards are also available.



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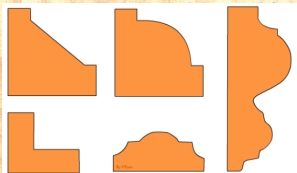


MOULDS

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Wood can be supplied in the form of mouldings which have a variety of sections. Moulds are used for decorative edges and can be found on traditional furniture.

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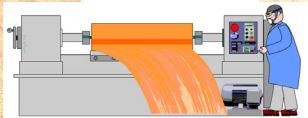
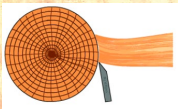


VENEER

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Veneer is a thin sheet/layer of natural wood, usually a similar thickness to cardboard. It is produced from a tree trunk in a number of ways. The most popular method is to 'peel' a layer of thin wood (veneer) with a cutter, whilst the tree trunk revolves on a large lathe.

Tap the images for more information and an exercise



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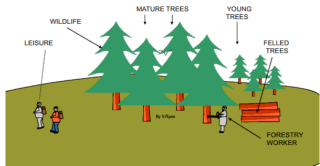


WHAT IS A SUSTAINABLE FOREST?

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This is a forest that is carefully managed, so that as trees are felled they are replaced with seedlings that eventually grow into mature trees. The forest is a working environment, producing wood products such as wood pulp for the paper / card industry and wood based materials for furniture manufacture and the construction industry. Great care is taken to ensure the safety of wildlife and to preserve the natural environment.

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SUSTAINABLE FOREST - SYMBOL

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Card packaging with this symbol, means that the materials used to make the packaging, have been harvested from sustainable forests. This means that the forest is managed in such a way that the trees are replanted so that trees that are cut down are replaced.

A sustainable material is a material that can be renewed, such as natural wood - trees can be grown to replace ones cut down and processed into products.

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THE FOREST STEWARDSHIP COUNCIL

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FSC The Forest Stewardship Council promotes the responsible management of forests - sustainable forestry.

The logo guarantees that paper and card has been purchased from responsible forest operations (sustainable forestry).

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