CRANWOOD INDUSTRIES

Technical Data Sheet

Wood Type:
Hardwood

Durability:
Moderately durable

Treatability:
Extremely difficult

Moisture Movement:
Medium

Density (mean, Kg/m^3):
770

Texture:
Medium

Availability:
Readily available at timber merchant

Chemical Properties:
Acidic nature, iron staining may occur in damp conditions, may also corrode metals

Use(s):
Heavy structural use, Joinery - Exterior, Joinery - Interior, Furniture, Flooring

Colour(s):
White/cream, Yellow brown (Pale yellow to mid-brown)

Also known as: American white oak (Q. alba), chestnut oak (Q. prinus, Q. montana), overcup oak (Q. lyrata), swamp chestnut oak (Q. michauxii)

Introduction
The Fagacae family includes some fifty species of the genus Quercus, producing the true oaks of North America, but manyof these are so small in size or found in such limited quantities that they are of no commercial importance. Some twenty species are important but since it is difficult to distinguish between the wood of individual species it is common practice to group them either as red or white oak. White oak group timbers are characterised by the small, latewood pores fine and numerous, not easily distinguished without a magnifying glass. Large pores of the heartwood filled with tyloses in heartwood.

Environmental
Not listed in CITES. Believed available from well-managed sources. Check certification status with suppliers.

Distribution
From southern Quebec and Ontario to eastern Minnesota and Iowa, extending eastward to the Atlantic and southward through the lower western slopes of the Allegheny and Appalachian Mountains.

The tree
The white oaks vary in size and form according to species and soil conditions, some are unsuitable for timber production. But others vary in height from 15m to 30m, well-grown specimens having a clear cylindrical bole of up to 15m with a diameter of about 1.0m.

The timber
Although generally resembling European oak, American white oak is more variable in colour, ranging from pale yellowbrown to pale reddish brown, often with a pinkish tint. The multi-seriate rays are generally higher than those of the red oaks producing a more prominent and attractive silver-grain figure on quarter-sawn surfaces. The grain is generally straight, and the texture varies from coarse to medium coarse. As with the red oaks, the quality depends greatly on the conditions of growth; slowly-grown northern white oakusually being lighter in weight and milder, than that from the southern states.

Drying
Like all the true oaks the timber dries slowly, with a tendency to split, check and honeycomb.

Strength
It compares fairly closely with European oak in general strength, but on t he whole, its higher density provides rather
higher strength.

Working qualities
Medium - Variable in working properties according to rate of growth, slow-grown material being easier to work than fast-grown, but either type can be finished smoothly if care is taken. A reduction of cutting angle to 20° is often helpful in planing. The timber can be glued, stained and polished, and takes nails and screws well.

Oak European
Technical Data Sheet

Wood Type:
Hardwood

Durability:
Slightly durable

Treatability:
No information

Moisture Movement:
Medium

Density (mean, Kg/m^3):
510

Texture:
Fine

Availability:
Limited availability at specialist timber merchant

Chemical Properties:
Iron staining may occur in damp conditions, similarly corrosion of metals

Use(s):
Joinery - Interior, Furniture

Colour(s):
Yellow brown

Latin name: Quercus robur, Quercus petraea, Quercus sessiliflora, Quercus pedunculata
Also known as: European oak, English oak, French oak, Slovanian oak, Polish oak

Drying
Oak dries very slowly with a marked tendency to split and check, particularly in the early stages of drying, and there is considerable risk of honeycombing if the drying is forced, especially in thick sizes. End and top protection must be provided to freshly sawn stock exposed to sun and drying winds, and sticker thickness should be reduced to about 12mm for stock piled in the open air during early spring and onwards until winter.

Strength
Both the sessile and pedunculate oaks have well known and high strength properties, and those hybrid oaks developed from both types and common throughout Europe, are similar in their strength properties. * MECHANICAL PROPERTIES. Note: In BS 5268-2: 2002, there is a discrepancy between Tables 7 and 15 regarding characteristic density and Strength classes for use in joint design. The values quoted here should be used, rather than those included in the 14 March 2002 edition of the Code.

Working qualities
Medium to difficult - The working and machining properties of oak vary with the mild to tough material which either machines easily or with moderate difficulty. These basic properties are concerned with growth conditions, but they may be exaggerated by indifferent drying methods which allow plain-sawn boards to cup, or severe case-hardening to develop, causing excessive wastage in planing and moulding, cupped stock in resawing, and a greater degree of blunting of cutting edges. These must be kept sharpened, particularly where cross grain is present, and especially in planing highly-figured quarter-sawn surfaces where there may be a liability for the grain to tear out at the juncture of the wide ray-figure thus producing a shelly appearance. In general, oak finishes well from the planer or moulding machine although in some cases a reduction of cutting angle to 20° is preferable. The wood can be stained, polished, waxed, and glued satisfactorily, takes nails and screws well, except near edges, when the wood should be pre-bored, and takes liming and fuming treatments well.