

SOUTHERN YELLOW PINE

The collective term "southern yellow pine" or "southern pine" includes principally longleaf, shortleaf, loblolly, slash (Cuban), and pond pines, growing in the southern states from Virginia to Texas. When cut into lumber these species cannot be identified one from another, except in the case of longleaf pine which can be distinguished from shortleaf and loblolly pine if the pith is present. (See Technical Note 141).

The southern pines have overlapping ranges in density and quality of material and consequently overlap one another in their uses. Many consumers ordering southern pine lumber make no distinction as to species. Some use the term "longleaf" or simply "southern pine" when they desire dense material, and "shortleaf," "Arkansas soft pine," or "North Carolina" pine when they want lighter material. Others in specifying "longleaf" refer to the definite species which bears that name. Confusion and litigation sometimes result because the buyer and seller do not understand each other's terminology.

There are no fundamental differences among the southern pines which make all of the wood of one species preferable to all of the wood of another for any given purpose. The dense wood of any southern pine has practically the same strength and other characteristics as the dense wood of any other southern pine, and the lighter weight pieces are more or less alike.

In tests at the Forest Products Laboratory longleaf and slash pines have been found to have somewhat higher average strength properties than shortleaf, loblolly, and pond pines, but dense pieces of the latter species were found to be stronger than the average pieces of the former. Aside from defects, density can be taken

as the factor which determines the suitability of any piece of southern pine for structural purposes. It is easily determined by visual methods, and structural timbers are now being classified and sold under density specifications.

The best visual indication of density is the proportion of summerwood, which is the darker portion of the annual growth ring. The greater the percentage of summerwood, the higher is the density. Rate of growth, which is sometimes used as a basis for density classification, cannot be considered as a satisfactory substitute for the summerwood requirement. The density rule given in the manual of the Southern Pine Association specifies both the proportion of summerwood and rate growth, but of these specifications the summerwood clause is decidedly the more important.

Density is a more reliable factor than species in determining the suitability of pieces of southern pine for uses even where structural strength is of secondary importance. Hardness - a quality desirable in flooring, for instance - is directly dependent upon density. The pitch content of the southern pines varies more with density than with species, the denser pieces being more resinous. Dense pieces of any southern pine swell and shrink more with changes in moisture content than do lighter pieces, so that density is the best criterion of the ability of wood to stay in place. The workability of the southern pines is more dependent on the density of the wood than on the species. Light pieces are less liable to split and are in general more easily worked than dense pieces.

For many uses the trouble and expense involved in classifying southern pine by a density rule would not be justified. There are several possible ways, however, in which a consumer ordering direct from mills may usually obtain material of given characteristics without any direct density specifications. These methods, however, do not afford a positive means of getting material of the character desired.

When the type of stands of timber in different regions is known, this knowledge can be used to some extent in the selection of southern pine lumber.

Virgin-growth southern pine is denser on the average than second-growth pine. As high as 90 per cent of the longleaf and slash pines cut from a virgin stand may classify as dense under the grading rules. The percentage of virgin-growth shortleaf, loblolly, and pond pines that could actually be classified as dense is much smaller than 90 per cent, but even in these species material cut from virgin growth averages considerably denser than the wide-ringed, coarse-textured wood which characterizes most second-growth pine. Many of the mills operating in the old lumbering regions have cut most of their virgin-stand timber and are now operating in second-growth stands. Thus the lumber at present produced in Virginia and Carolina is usually from second-growth stands and is quite different than that coming from some of the newer mills in the South which are working in virgin timber.

The southern pine region is roughly divided into two belts. The southern belt, extending about as far north as the northern boundary of Louisiana, and including the coastal halves of the Carolinas, produces mostly longleaf and slash pines. These two species of pine produce 65 per cent of the world's turpentine and rosin. Known as naval stores, these products together with other pine tree chemicals, such as pine oil, rosin oil, tar, and pure abietic acid are valuable sources of revenue. The young longleaf and slash pine forests promise to maintain or even increase the supply of these products, and will thus afford an important early source of revenue to timber land owners who practice practical forest management in the region.

In the northern belt most of the timber is shortleaf and loblolly pine. Mills operating in some localities in the southern half are now cutting timber which runs 90 to 100 per cent virgin longleaf pine, so that most of the

lumber obtained from such regions is excellent for purposes where high density is desirable. Arkansas mills, on the other hand, are cutting practically no longleaf or slash pines, and the shortleaf, or "Arkansas soft pine," from this region is chiefly of the easy-working, smooth-textured wood desirable for finishing lumber.

Some southern pine mills follow the practice of classifying their heavier, darker material of medium rate of growth as "longleaf," and the wider-ringed light weight material as "shortleaf," regardless of the botanical species of the trees from which it was cut. While a consumer ordering "longleaf" from such a mill might not get wood which would all classify as dense, he would probably get material denser on the average than if he specified "shortleaf" or made no "species" or density specification at all. He would, however, have small grounds for the refusal of a shipment of any southern pine lumber sent him if the shipment did not consist of the class of material he desired.

Where high-strength dense material is essential, the density rule affords a definite basis for purchase and inspection, thus minimizing the chance of misunderstanding and controversy. Copies of the density rule may be obtained from the Forest Products Laboratory, Madison, Wisconsin, or from the Southern Pine Association, New Orleans, Louisiana.