

REDWOOD SEASONING COMMITTEE ACTIVITIES

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In the past a great number of techniques for seasoning of lumber have been experimented with, but up to this time a combination of air drying, predrying, and kiln drying have proved to be most economical. In the light of innovations and the general increase in pace of the building materials market the necessity to produce a better product economically forces lumbermen to be open minded on the ideas that will provide better drying at lower cost.

In pursuit of this common goal our activities have been directed toward the following areas:

1. Reviewing and revising the California Redwood Association's Kiln Operator's Manual, authored by Byrne Manson.
2. Updating cost analysis for predriers.
3. Studying the potential of other drying systems to either augment or replace our present system.

REVISION OF THE KILN OPERATOR'S MANUAL

Due to the wide variations in the moisture and extractive content, plus the overall difficulty in seasoning redwood, the industry felt it was necessary to develop kiln schedules that were most advantageous for seasoning redwood.

In 1947 and 1948, experimental charges were tested in the CRA experimental dry kiln at the Hammond Lumber Company. This ground work was the basis of the manual. Since the original stock of the manual had been depleted, we were in a position to reprint and naturally revise the manual as needed. The major areas the committee decided requiring revision and updating were proper air yard layout, improved segregation, general kiln design, and basic information concerning alternate methods of drying. In addition to the original purpose of the manual as a guide line for kiln operators, the new revision is an attempt to supply the kiln operators with other drying methods and ideas that may be incorporated with their present system, and at the same time supply reference information for the operator to pursue further research on his own.

During the initial drying states, redwood must be dried slowly, and in doing so, kiln drying may not be economical because the lumber cannot stand the rapid drying which the kilns are capable of producing and the kilns are not efficient at low drying rates which must be maintained for heavy, green redwood. Consequently, two of the main areas of revision are air yard layout and improved segregation.

AIR YARD LAYOUT

In obtaining proper air yard layout it is fortunate that throughout most of the region the prevailing winds are north and south, so there is usually no problem in obtaining a yard layout which will be most efficient for both the wind and the sun. For those areas that do not have north/south winds, it is the general consensus that north/south alleys are still best in order to get maximum benefit from the sun.

SEGREGATION

A special subcommittee was appointed to study and recommend more precise guidelines for segregation. If the kiln operator could be certain of the moisture content range of a given kiln charge, he could greatly increase the output of his kilns. The main problem area is the fact that generally 10% or less of the boards are extending the drying schedules by 20% or more. Consequently, the improved guidelines to be incorporated in the manual will recommend segregating into three different sorts for upper grades. The three sorts are light, medium, and heavy and will be classified according to weight, moisture content, and visual grading characteristics. In addition to these general segregations, pieces with a ring count of 50 per inch or over should be placed in the next heavier segregation than the green board weight would place them.

Experimental work within the industry is being done using moisture sensing detection equipment for aiding in segregation. This equipment may be used as a grading tool to aid visual grading, but not replace it because many other items such as bird's eye, extractive content, and density play a significant part in segregating. An example in support of a moisture sensing detector is the fact that by weight alone a piece of redwood with a high moisture content and low density cannot be differentiated from a piece of low moisture content and high density. Some visual grading will always be necessary as long as redwood is graded for appearance. However, improved methods should be continuously investigated.

METHODS OTHER THAN KILN DRYING

Other drying methods covered in the revision are predriers, high temperature drying, chemical seasoning, solvent seasoning, prefreezing, and microwave drying. Bibliographical references have been listed for further study in these areas for the kiln operators.

PREDRIERS

There has been much debate whether predriers are the answer for combating large inventories, rising cost, and lack of versatility. Due to the nature of redwood, it has been necessary to carry large inventories and devote a considerable amount of acreage for yarding. Under the current economic trends and rising land values, interest and tax rates, labor wages, etc., the potential economic gains for predrying may be more realistic than in the past. There is no simple cut and dried method for determining the economical outcome by utilizing predriers because there are so many intangible variable factors to consider. Consequently, the study has to be an average of all the CRA mills for it is extremely difficult to determine such items as how valuable land is, or, the average accumulative cost of air yard lumber per thousand board feet. In order to improve past studies and make them applicable to present day conditions, we are currently in the process of updating the cost analysis of predriers. It is our intention to provide a sound base from which individual companies can adapt the information to their own particular situation. Areas included in the study will cover not only the overall economics, but also a comparison to current air drying cost.

In conclusion, the committee's activities have been centered around improving our present seasoning systems of air drying and kiln drying; and at the same time investigating the potential of other drying methods that will either augment our present system or replace it altogether.