

WCLIB PRESENTATION ON GRADE SIMPLIFICATION  
AND STANDARDIZATION

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It seems likely the subject you have been discussing - the proper drying of lumber - will become increasingly important to the West Coast lumber producing region due to recent actions in the American Lumber Standards Committee relating size to moisture content for 2-inch and thinner lumber. This ALS action is a reflection of similar proposals originating in the Grade Simplification and Standardization Program.

The Grade Simplification and Standardization Program developed out of an effort to promote lumber through the National Lumber Manufacturers Association's National Wood Promotion Program. It was quickly determined that effective promotion of lumber on a national basis covering all species was impossible as long as the hodgepodge of grades, grade names, stress values and trade practices remained in use. For example, some grade names are similar in the grading rules of several producing regions but quite often represent entirely different qualities. Due to these differences in grades and species, considerable confusion has resulted. As an example, a buyer, familiar with grade quality of a certain species, may get a quite different quality when ordering another species under a similar grade name.

To overcome these problems and permit lumber to be covered by simple, easy-to-use, standardized grades under standardized grade names, the Grade Simplification and Standardization Committee was formed.

After clearly outlining the objectives, this Committee appointed a sub-committee composed of technical representatives from each softwood producing region. This sub-committee was charged with the responsibility of working out the details of accomplishing the objectives set forth by the full Committee.

This sub-committee had been given a tremendous task and they all knew it. Resentments and antagonisms had built up between regions after many years of competition and too, each group felt the rules of his region were best for the people he represented and the species they manufactured, so wanted them retained. However, the sub-committee soon realized that without cooperation from all concerned, no progress would be made. After some "give and take" and compromises, the sub-committee began to make progress toward the objectives.

A major stumbling block soon developed as a result of Southern Pine representatives insisting that all 2-inch and thinner lumber must be surfaced dry or be surfaced oversize.

The West Coast region has traditionally shipped the bulk of their construction-type lumber unseasoned. The first sawmills in the West were built on tidewater, shipped by water and many of them still do. This lumber is invariably shipped green, in many cases rough green to foreign countries, and also a large volume is surfaced and shipped by water to California, Hawaii and East Coast points.

West Coast species of lumber surfaced in the green condition yards well and demands for West Coast lumber, surfaced green, have always been strong. So, many West Coast mills have always "shipped green."

In waterborne shipments, volume is the basis for the freight charge, as opposed to rail shipments where weight is the deciding factor. There are many considerations in the moisture content-size subject. Speakers today have mentioned factors bearing on the end use, in other words the suitability of the product for the intended use. The controversy which has developed is not particularly from that standpoint but rather is due to economic considerations and competitive advantages and disadvantages to one class of shipper over another. We all know that freight rates have been increasing rapidly over the years until they have reached a figure today where shipping cost is a major factor in pricing of lumber. As members of the Western Dry Kiln Club, I am sure you are aware of the fact that lumber surfaced green can be cut smaller than lumber that is to be dried first and surfaced to the same size. Therefore, two or three economic factors arise. First, the overrun in log scales. The green mill can cut a smaller size before surfacing and can get more "overrun" than the dry mill who must cut lumber a little larger. Secondly, the dry mill is able to ship lumber at a lower rail freight rate because it is lighter. Thirdly, drying and surfacing dry results in more fall down in grade than surfacing green, and so there's an interplay of factors that are all being weighed very carefully by everyone interested in this program.

The Southern pine industry has dried lumber for many years. It is just about a necessity, because Southern pine as well as some other species tends to stain very readily if kept in a green condition for any length of time. Also, it has a tendency to warp in seasoning and to make a marketable product it has been necessary for them to dry it before marketing. Over the years the Southern Pine Inspection Bureau struggled through the American Lumber Standards Committee (ALS) to make it mandatory that ALS sizes apply only to seasoned lumber, dressed at a maximum 19% moisture content and to require all unseasoned lumber to be surfaced oversize in sufficient amount that it will meet the ALS minimum size after drying to 19% moisture content. This applies to lumber 2-inches and thinner as it is generally accepted that the heavier sizes are not customarily dried. The Southern Pine delegates on the Grade Simplification and Standardization sub-committee kept coming back to this point and insisting that the moisture content and size controversy must be settled before proceeding with grade simplification and standardization. This moisture content-size problem grew increasingly more controversial until it was apparent that the program was going to stall. I am sure all the people who have been influential

in starting the Grade Simplification and Standardization Program and pushing it along feel that such a program is vital to the lumber industry if they are to retain the present markets for lumber.

In an effort to salvage the program and get it moving again, a group of people from the West proposed to representatives from the Southern pine industry that green surfaced sizes be at present ALS sizes and that lumber surfaced dry be reduced in size by the amount green lumber shrinks to dry size. Green lumber surfaced to present ALS sizes has proven itself in the market place. There have been billions of feet of it sold. In fact, a majority of the homes built in the U. S. have been framed with it and the lumber has performed satisfactorily. Since FHA accepted it on their standards successfully over the years, no one could say green lumber had not performed satisfactorily on the job.

This subject was taken to the U. S. Forest Products Laboratory for verification of the relative strength of a reduced dry size which was proposed to the present ALS size surfaced unseasoned. The U. S. Forest Products Laboratory verified that lumber surfaced dry to 1-1/2" thickness would perform as equivalent to the 1-5/8" green thickness, both surfaced to the same width. This was in contrast to the original proposal that dry lumber be reduced in size all around in the amount that the green lumber actually shrank. The point was brought up that this would result in two inventory widths which it was felt would cause considerable difficulty in the wood-using industry, and that fewer problems would arise if only the thickness was reduced. Also, a better ratio of strength to wood volume results from the thinner but wider piece.

This proposal met with some interest in the Southern Pine group and they agreed to take it back to their membership to get their reactions. A meeting was held in New Orleans in March 1962 by principals of all regions and an agreement was reached. A resolution was taken back to each respective region for their approval. The resolution went along with the sizes that had been proposed but in particular laid down the ground rules for identification of those sizes. While the West Coast Lumber Inspection Bureau and West Pine Association governing bodies approved the New Orleans resolution, the Southern Pine Lumber Inspection Bureau, although they had many of their principals at that meeting and some of their Board of Governors, did not agree and wanted to stick with the original proposal of present ALS sizes for dry and increased size for green. In the meantime, preparation was being made for a meeting of the National Lumber Manufacturers grade simplification committee and also the American Lumber Standards Committee in Los Angeles in May of 1962. While disagreements were popping up here and there, it appeared they could be worked out. At this meeting another problem developed over the identification of the green versus dry sizes and subsequently the Southern Pine Lumber Inspection Bureau withdrew from the program. When they took this action, the Western Pine Association and West Coast Lumber Inspection Bureau met to decide how to proceed and they agreed to go ahead with the program without the Southern Pine Lumber Inspection Bureau. So the staff of Western Pine Association and West Coast Lumber Inspection Bureau continued with the grade simplification portion of the program, with the objective of writing a common grading rule for all Western species.

This work was continued throughout the summer and fall of 1962 and in late October, the staff of Western Pine Association and West Coast Lumber Inspection Bureau presented a proposed supplement listing identical grades covering all Western species. This supplement was presented to the Western Pine Association's Board of Directors, and approved subject to revision of the grading rules committee. After study of the proposal, the WPA committee made practically no changes in it and the staff was instructed to go ahead and put out a supplement subject to FHA approval of 1-1/2" dry size. WCLIB wasn't in a position to act that fast. A serious split in the West Coast group over the proposed sizes, green versus dry, had developed. We felt that we should not go ahead with the program until after our committee had a chance to act upon it. After inquiry, FHA received assurance from the U. S. Forest Products Laboratory that lumber surfaced 1-1/2" dry at an average of 15% moisture content would perform equally to lumber surfaced green at present ALS sizes so they then indicated they would approve 1-1/2" dry lumber used on FHA-insured houses. On that basis the Western Pine Association

went ahead to put out their supplement but in the meantime approval from FHA was not forthcoming. The opposing groups approached the FHA, one group pressing for FHA acceptance and the other opposed. Consequently FHA took no action at all and haven't to this day. They later stated they will withhold any action until this matter is resolved in the American Lumber Standards Committee.

Probably many of you have seen the proposed grades. One of the major objectives was to arrive at common grade names. Grade names posed a similar problem in all regions and this also was one of the major objectives of the Grade Simplification and Standardization Program. I am sure you can all recognize that a promotion man going to a specifier, architect or engineer, offering the selection of 12 or 15 species, would be much more effective in his approach if he could promote under one grade name similar qualities in all the species. Arriving at grade names that all regions could accept has been one of the most difficult problems. In the November 1962 meeting of the Grade Simplification and Standardization Committee at Miami Beach, the Committee determined they must make a decision on grade names. This was finally accomplished after a great deal of discussion, and the grade line-up then appeared in the proposals as follows. The top grade, which is a combination of WCLIB grades of B&BTR. and C, and Western Pine C SELECT and B&BTR., was designated "SUPREME." Next grade is the WCLIB D and WPA D SELECT and was designated "PRIME." Those are the two Finish grades. In Boards the top grade is a knotty appearance grade, similar to the present WCLIB SEL MERCH and NO. 2&BTR. pine Boards, and designated "PREMIUM." The next is a grade included principally for Western Pine manufacturers which was named "SPECIAL" and designed as a tight sheathing board and also as a competitive grade of panel. The West Coast Lumber Inspection Bureau, by the way, didn't propose to make that particular grade. And then we had "STANDARD" (our present STANDARD & BTR), "UTILITY" and "ECONOMY" grades remain the same. In the Dimension sizes, the top grade is the knotty-type appearance grade called "PREMIUM," next "STANDARD," which is a combination of our present STANDARD and CONSTRUCTION. Next are "UTILITY" and "ECONOMY" which remain the same as present. That is the proposed simplification and standardization in grades and grade names.

Immediately following the grade simplification meeting in Miami, the American Lumber Standards Committee met in Washington, D. C. As the size-moisture content problem is a real "hot potato," an open meeting was arranged the day preceding the Committee's closed meeting. Anyone from the industry could attend and have a chance to speak his mind before the Committee. Proposed sizes were discussed pro and con, all of the facets were aired. The following day the Committee met. At this meeting, November 9, 1962, the ALS Committee didn't adopt the full program due to all the controversy that had come out in the meeting of the 8th. But they did go so far as to adopt a principle that ALS sizes be related to moisture content. To arrive at what the sizes should be and at what moisture content they should apply, they appointed a 10-man sub-committee to study the problem and come back with a recommendation to the full Committee. The West Coast Lumber Inspection Bureau's Executive Committee met January 19, 1963 and at that time they were presented with the grade proposals and the proposal that we had joined in with the Western Pine Association of 1-1/2" Dimension as the surfaced dry size of 2" Dimension at 19% maximum (15% average) moisture content. This was reaffirmed by the West Coast Lumber Inspection Bureau's Executive Committee as far as the size was concerned but they felt that due to some facts presented by an independent testing agency, perhaps a second look should be taken at the shrinkage factors developed by the U. S. Forest Products Laboratory. They pointed out these figures were based on true radial and tangential pieces of small Douglas fir specimens and that in actual lumber the true planes do not exist but are somewhat a combination of both. So, to verify or come up with a new answer on shrinkage factors, a study was instigated by the West Coast Lumber Inspection Bureau to be conducted by the Oregon Forest Research Laboratory in Corvallis to determine how regular production lumber shrinks and how much. Tests were to be made to determine what the shrinkage factor would be at an average moisture content of 19% and at an average of 15% moisture content. The West Coast Lumber Inspection Bureau was going to underwrite the program but the Forest Research Laboratory Advisory Committee felt that the data developed would be of more value if no private industry or group had anything to do with the cost.

So, they underwrote the cost of it except that the Bureau staff gathered the samples for them according to procedures set down by the Laboratory.

The results of the study at the Forest Research Laboratory coincided very closely with a study made on Douglas fir boards by the U. S. Forest Products Laboratory and is so close that they might as well be considered identical. They came up with shrinkage figures at 15% average moisture content of 2.72% on widths at the Oregon Forest Research Laboratory and 2.8% in widths from the U. S. Forest Products Laboratory, and on thickness 2.25% at Oregon Forest Research Laboratory and 2.35% for the U. S. Forest Products Laboratory. Inasmuch as the Subcommittee of the American Lumber Standards had designated the U. S. Forest Products Laboratory as their consultant on shrinkage factors, the data given by the U. S. Forest Products Laboratory remained in effect.

After this study was completed at the Oregon Forest Research Laboratory, the West Coast Lumber Inspection Bureau's Executive Committee met. The Committee brought the motion passed at the previous meeting out on the table for discussion and they took a different action. Instead of the previously agreed 15% average moisture content, they reaffirmed the moisture content provisions presently included in Rules No. 15 which is an average of 19% moisture content for dry lumber. They wanted the 1-1/2" dry size to apply at that level and also the equivalent green sizes to be worked out on the basis of 19% average. We were aware of the U. S. Forest Products Laboratory statement that the new dry size was equivalent to green lumber surfaced to present ALS size if based on 15% average and not 19%. This was the position of the West Coast Lumber Inspection Bureau at the time of the meeting of ALS in San Francisco on May 3rd.

At this meeting, the ALS Committee adopted as a package the provision for moisture content and size worked out by the sub-committee. With your permission I will read the items adopted by the ALS Committee at the May 3rd meeting in San Francisco:

- A. American Lumber Standards surfaced sizes for 2" Dimension will be 1-1/2" thickness by present width at a maximum of 19% moisture content.
- B. The American Lumber Standards surfaced sizes for 1" Boards shall be 3/4" by present widths at a maximum of 19% moisture content except that a 5/8" dry Board shall be considered standard if it is identified as to thickness (identified by grade stamp stating 5/8").
- C. Provisions in regional grading rules for lumber surfaced at other moisture content levels will show size differentials in thickness and width.
- D. The differential between the American Lumber Standards dry surfaced sizes and lumber surfaced at a higher moisture content must be technically equivalent and have the approval of the Forest Products Laboratory.
- E. In regions where green and dry lumber 2" or less in thickness is recognized in grading rules and grade marked, such lumber should be marked in a manner that will distinguish each quality and be understandable to the layman.
- F. An optional tolerance may be specified in grading rules providing for 5% variation above the maximum moisture content on reinspections.
- G. An editorial committee will prepare a revised Simplified Practice Recommendation 16-53 encompassing the foregoing and this document will be presented to the American Lumber Standards Committee for comment.

- H. The next meeting of the American Lumber Standards Committee will be held in sufficient time, probably in early September, to permit the Department of Commerce to circularize the Standards to the Acceptor List for possible promulgation by January 1, 1964.

The Grade Simplification and Standardization Committee meeting in Las Vegas on May 7th approved the action taken four days earlier at San Francisco. It was mentioned earlier that the Southern Pine Lumber Inspection Bureau had dropped out of the program the summer of 1962. At the Las Vegas meeting, the Southern Pine representatives were asked if the action of the ALS Committee had changed their views in any way about re-entering the program and going along with the rest of the softwood industries. The representatives of the Southern Pine Lumber Inspection Bureau informed the Committee that due to the recent ALS action they felt justified in going back to their member mills to see if they were willing to re-enter the program. The Committee was informed that they would do that immediately on return to the South and would notify the chairman as soon as they could get an answer, probably within 30 days. It appears we may possibly come out of this with a full program after all. If the Southern Pine Lumber Inspection Bureau decides to re-enter the program and if the program on new sizes and moisture content is approved by those on the Acceptor List sent out by the Department of Commerce, we might be on our way again. Three years of work has been spent on this program and it's been "go" one day and "no go" the next. But at this point we can't say how it is going to end. The West Coast Lumber Inspection Bureau plans to appoint a committee to work out green sizes equivalent to the proposed dry sizes. This becomes quite a problem when we begin to relate the widths of one thickness to another. In other words, 2" thickness to 3" thickness. There are manufacturing problems but the actual mechanics depend on the data. The shrinkage factor is set now, so it is just a matter of mathematics, arriving at how much shrinkage will be applied and rounding off small fractions to a practical figure. There has been some suggestion that one region would not go to the same moisture content levels as other regions. The most desirable situation would be uniform drying practices in all regions, but until the committees dealing with the problem have met and given their decisions, we don't know how it will come out. That is just about where we stand today.