

U.S. DEPARTMENT OF COMMERCE

DANIEL C. ROPER, Secretary

BUREAU OF STANDARDS

LYMAN J. BRIGGS, Director

**WOOD SHINGLES**

(RED CEDAR, TIDEWATER RED CYPRESS,  
CALIFORNIA REDWOOD)

(Second Edition)

COMMERCIAL STANDARD CS31-33

[Issued October 31, 1933]

Effective Date, September 15, 1933

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A RECORDED STANDARD OF THE INDUSTRY

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1933

## PROMULGATION STATEMENT

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On March 27, 1931, a general conference of representative manufacturers, distributors, and users of red cedar shingles adopted a commercial standard for this commodity. The adherence survey in early 1933 revealed the need for extension of the standard to cover California redwood and tidewater red cypress shingles. The standard has been revised accordingly, with no change in the technical requirements. The industry has since accepted and approved for promulgation by the Department of Commerce through the Bureau of Standards the revised standard as shown herein.

The standard became effective on September 15, 1933.

Promulgation recommended.

I. J. Fairchild,  
*Chief, Division of Trade Standards.*

Promulgated.

Lyman J. Briggs,  
*Director, Bureau of Standards.*

Promulgation approved.

Daniel C. Roper,  
*Secretary of Commerce.*

# WOOD SHINGLES

(Red Cedar, Tidewater Red Cypress, California Redwood)

(SECOND EDITION)

## COMMERCIAL STANDARD CS31-33

### PURPOSE

1. This quality standard for wood shingles<sup>1</sup> is a basis for common understanding between manufacturers, distributors, and users of this product. By its general acceptance, use, and certification by labels, it is hoped that interest may be increased in the manufacture, sale, and use of high-grade wood shingles which should redound to the mutual advantage of all concerned.

2. The protection and service afforded by wood shingles and, consequently, the success of the industry, is in direct proportion to the quality of shingles used and, therefore, the following commercial standard of quality is provided for guidance in the manufacture, sale, and use of this product.

### SCOPE

3. This quality standard provides a minimum specification for the highest commercial grade of wood shingles of the above species known as "no. 1 grade" in American Lumber Standards and as published in the 1933 supplement to Simplified Practice Recommendation R16-29. It covers length, width, thickness, grain, defects, color, packing, and the grading tolerances for these requirements.

### GENERAL REQUIREMENTS

4. All commercial standard wood shingles shall be of 100 percent heartwood, well manufactured and neatly packed; they must comply with or exceed the specifications herein established for quality.

### GRAIN

5. All commercial standard shingles shall be strictly edge-grained; that is, the thin lines constituting the annual or growth rings shall be vertical when the shingle is laid flat as in use. Edge grain is synonymous with quartered or quarter-sawed lumber or flooring and the condition is considered fulfilled when no portion of the grain slope exceeds 45° from the perpendicular.

<sup>1</sup> Shingles covered by this standard are from the following species which constitute the highest class of decay resistance. Their high durability, close grain, and even texture make them especially suitable for roofing shingles. Western red cedar (*Thuja plicata*) whose chief commercial range is in Oregon, Washington, and British Columbia; Tidewater red cypress (*Taxodium distichum*) found chiefly in the tidewater regions of Florida and Louisiana; California redwood (*Sequoia sempervirens*) found in the coastal region of northern California and the southwestern extremity of Oregon.

## DEFECTS

6. Knots, wormholes, decay, shakes, checks, crimps, flat grain, cross grain, and sapwood constitute natural defects that are not admissible, nor are defects in manufacturing, including shims, feather tips, diagonal grain, waves, and torn fiber.

## COLOR

7. Variations in the color of heartwood of these species are caused by differences in the density of natural color filtrations. No evidence has yet been found that color of the heartwood of any species has any influence upon the strength or decay resistance. Consequently color differences are not considered defects.

## DETAIL REQUIREMENTS

## LENGTH

8. Minimum length shall be 16 inches. The usual lengths in addition to 16-inch shingles are 18 and 24 inches.

9. A minus tolerance of 1 inch will be allowed in not more than 10 percent of any shipment. Shingles cut from equalized blocks or rebutted may be one fourth inch less than the standard length.

## WIDTH

10. Maximum width shall be 14 inches. Minimum width for shingles 16 inches up to but not including 24 inches long, shall be 3 inches. Minimum width for shingles 24 inches and longer shall be 4 inches. In 16- and 18-inch shingles those less than 4 inches in width shall not constitute more than 10 percent of any shipment.

11. Shingles shall be uniform in width; that is, with parallel sides. A tolerance of one fourth inch variation in the width shall be allowed.

## THICKNESS

12. Shingles are measured for thickness at the butt ends and designated according to the number of pieces necessary to constitute a specific unit of thickness. For example 4/2 indicates that 4 shingles measure 2 inches, while 5/2¼ means that each 5 shingles measure 2¼ inches in thickness.

13. Shingles shall be uniform in thickness, but a minus tolerance of 3 percent is allowable to compensate for the difference in shrinkage encountered in kiln-drying. This tolerance is based on the total thickness of the bundle.

## PACKING

14. All random width shingles shall be packed flat in straight courses and the unit shall be the "square" pack<sup>2</sup> and shall contain not less than the minimum quantity specified in the following table:

<sup>2</sup> See description under glossary terms.



TABLE 1.—*Running inches per bundle and unit for standard packing*

| Length (in inches) | Thickness (in inches) | Number courses per bundle | Number running inches per bundle | Application basis     | Maximum exposure to weather (in inches) | Number bundles per unit | Number running inches per unit |
|--------------------|-----------------------|---------------------------|----------------------------------|-----------------------|---|-------------------------|--------------------------------|
| 16.....            | 5 butts 2.....        | 20/20                     | 740                              | Roof square.....      | 5                                       | 4                       | 2,960                          |
| 18.....            | 5 butts, 2¼.....      | 18/18                     | 666                              | do.....               | 5½                                      | 4                       | 2,664                          |
| 24.....            | 4 butts, 2.....       | 13/14                     | 499                              | Side wall square..... | 10                                      | 3                       | 1,497                          |
| 24.....            | do.....               | 13/14                     | 499                              | Roof square.....      | 7½                                      | 4                       | 1,996                          |

15. In the packing of shingles the number of courses in each end are indicated so that the designation 13/14 means a bundle with 13 courses at one end and 14 courses at the other end, or a total of 27 courses.

#### DIMENSION SHINGLES

16. Those shingles cut to specified widths and known as "dimension shingles" shall be designated only according to the number of pieces per bundle.

#### RUNNING INCHES

17. The chief concern of the shingle buyer is the amount of coverage provided in a bundle of shingles with a prescribed exposure to the weather; this depends on the total width of the shingles when laid side by side, and shall be referred to as "running inches." Modern methods of manufacture and packing random width shingles have established 18½ inches as the average measure of running inches in each course of shingles in the bundle and the total running inches may be ascertained by multiplying this figure by the number of courses.

#### GRADING TOLERANCE

18. The economical production of wood shingles requires the use of high-speed machinery and every other facility to reduce the expense incident to sorting and packing. As a consequence it is possible that some few shingles with unnoticed defects will occasionally find their way into the bundles.

19. If reinspection is necessitated because of the too frequent appearance of defects, the shipment may be refused in which the total running inches of defective shingles constitutes 4 percent or more of the shipment.

#### INSPECTION

20. The inspection of wood shingles, both in car lots at destination or at customary inspection points, shall ordinarily be made on the basis of the usual unit of inspection, which is eight bundles per carload or fraction thereof. Because of the wide variation in shingle widths all percentages shall be calculated on the basis of running inches.

#### GLOSSARY OF TERMS

*Checks.*—A check is a lengthwise separation of the wood, which occurs usually across the rings of annual growth.

*Crimps.*—A crimp is a breaking down or collapse of wood fibers usually due to an inherent condition in some timber or a result of too rapid drying.

*Cross grain.*—A condition that should not be confused with the terms "flat" or "edge" grain and that might better be termed "cross fiber", since it is a deviation of the wood fibers from the true parallel of the shingle. It is a serious defect when it runs from one face of the shingle to the other within a longitudinal distance of 4 inches or less in any portion measured 12 inches from the butt.

*Decay.*—A disintegration of the wood substance caused by the action of wood-destroying fungi. Dote and rot are synonymous with decay.

*Diagonal grain.*—A condition where the grain of the wood does not run parallel to the edges of the shingle. It is considered a defect when the grain diverges or slants 2 inches or more in width in 12 inches of length.

*Feather tips.*—A feather tip or shim is a condition of manufacture found on the thin ends of some shingles where the saw came out of the piece prematurely, producing a thin, flimsy featherlike edge. The tip ends of the shingle may be uniformly thin and produce a thoroughly satisfactory roof, but when they are uneven or with corners sawn off, the shingles will not lay up evenly.

*Flat grain.*—A condition in shingles or lumber where the growth rings are flat or horizontal as opposed to edge-grained or quartered material where the growth rings are on edge or vertical to the surface.

*Knots.*—A knot is a branch or limb embedded in the wood substance of a tree which has been exposed in the process of manufacture.

*Sapwood.*—The portion of the wood of a tree immediately next to the bark usually characterized by a lighter color than the heartwood or interior wood of the tree. While there is usually no difference in the physical strength of the two kinds of wood, sapwood is quite susceptible to decay.

*Shakes.*—A shake is a lengthwise separation of the wood which occurs usually between and parallel to the growth rings.

*Shims.*—See Feather tips.

*Square pack.*—A unit providing sufficient shingles for the coverage of an area of 100 square feet when the shingles are laid at any specified exposure to the weather. See page 5.

*Torn fiber.*—This condition may also be referred to as "torn grain"—a fuzzy or whiskered appearance usually caused by a dull saw.

*Waves.*—Irregularities on the face of a shingle also referred to as "washboards" that are usually caused by a wobbling of the saw on its arbor.

*Wormholes.*—Wormholes are voids in the wood caused by the burrowing action of certain wood-infesting worms.

#### MANUFACTURERS' RECOMMENDATIONS

The following information is not part of the commercial standard for wood shingles, but represents the manufacturers' recommendations, based on long experience for maximum service from the use of wood shingles:

TABLE 2.—*Covering capacities, in square feet, of the various sized shingles (random width, square pack)*

| Quantity              | Size <sup>1</sup>                     | Use             | Number of inches exposed to weather |    |     |     |     |     |     |     |     |     |    |    |     |     |     |     |
|-----------------------|---------------------------------------|-----------------|-------------------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|
|                       |                                       |                 | 4                                   | 4½ | 5   | 5½  | 6   | 6½  | 7   | 7½  | 8   | 8½  | 9  | 9½ | 10  | 10½ | 11  | 11½ |
| 1 square (4 bundles). | 16-inch 5/2 shingles will cover on.   | Roofs.....      | 80                                  | 90 | 100 |     |     |     |     |     |     |     |    |    |     |     |     |     |
| Do.....               | do.....                               | Side walls..... |                                     |    |     | 110 | 120 | 130 | 140 | 150 |     |     |    |    |     |     |     |     |
| Do.....               | 18-inch 5 2/4 shingles will cover on. | Roofs.....      | 70                                  | 80 | 90  | 100 |     |     |     |     |     |     |    |    |     |     |     |     |
| Do.....               | do.....                               | Side walls..... |                                     |    |     |     | 110 | 120 | 125 | 135 | 145 | 155 |    |    |     |     |     |     |
| Do.....               | 24-inch 4/2 shingles will cover on.   | Roofs.....      |                                     |    |     |     | 80  | 90  | 95  | 100 |     |     |    |    |     |     |     |     |
| 1 square (3 bundles). | do.....                               | Side walls..... |                                     |    |     |     | 60  | 65  | 70  | 75  | 80  | 85  | 90 | 95 | 100 | 105 | 110 | 115 |

<sup>1</sup> See detail requirements, p. 2, for length and thickness.<sup>2</sup> Greater exposure not recommended.

*Proper weather exposure.*—In roofing, long experience has indicated the wisdom of exposing not more than one third of the shingle to the weather in order to assure adequate protection from the elements.

Since shingles are commonly manufactured in lengths of 16, 18, and 24 inches and since the grading rules permit 1 inch variation in a portion of the shipment, the maximum weather exposure recommended for a 16-inch 5/2 shingle is 5 inches; for an 18-inch 5/2¼ shingle, 5½ inches; and for a 24-inch 4/2 shingle, 7½ inches.

For side walls only half the length of the shingle should be exposed to the weather to secure the best results.

Allowing for the variation of lengths the maximum recommended exposure for a 16-inch shingle is 7½ inches on the side walls; for an 18-inch shingle, 8½ inches; and for a 24-inch shingle, 11½ inches.

*Formula for covering capacities per "square".*—

$$\frac{\text{Total number of courses in both ends of bundle} \times 18\frac{1}{2} \left\{ \begin{array}{l} \text{running inches} \\ \text{in each course} \end{array} \right\} \times \left\{ \begin{array}{l} \text{number of} \\ \text{bundles in} \\ \text{square} \end{array} \right\} \times \left\{ \begin{array}{l} \text{number of} \\ \text{inches exposed} \\ \text{to weather} \end{array} \right\}}{144} = \text{Number square feet 1 square will cover}$$

For example.—Find covering capacity of 1 square 16-inch shingles exposed 5 inches to weather:

$$\frac{(20 + 20) \times 18.5 \times 4 \times 5}{144} = \frac{14,800}{144} = 102 \text{ square feet}$$

*The proper nail.*—The heartwood of western red cedar, tidewater red cypress, and California redwood is naturally highly resistant to decay and when employed as shingles for roofs or side walls it is desirable to use nails which will last as long as the shingles.

Just as the chain is no stronger than its weakest link, so is a shingled roof no more enduring than its nails.

When ordinary wire nails are used, moisture soon reaches the nail and the process of rusting begins. A small pocket is formed which harbors moisture and facilitates the rusting process. In time the nails become rusted through and the shingles are torn loose under the attack of wind and weather.



If the proper nails are used, however, the shingles will be held securely and give service and protection throughout their natural life.

Numerous experiments have conclusively proved the wisdom and economy of high-grade nails, and maximum service may be assured by using either hot-dipped zinc-coated iron cut nails, or hot-dipped zinc-coated steel-and-copper nails.

TABLE 3.—Nails required per "square" <sup>1</sup>

| Size of shingles                  | 3-penny nail,<br>1¼ inches long     | 3½-penny nail,<br>1½ inches long    | 4-penny nail,<br>1½ inches long     | 5-penny nail, 1¾<br>inches long                           |
|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---|
| 16-inch.....                      | 3 pounds, 5-<br>inch expo-<br>sure. |                                     |                                     |   |
| 18-inch, 5/2¼ thick.....          |                                     | 3 pounds, 5-<br>inch expo-<br>sure. |                                     |   |
| 24-inch, 4/2 thick.....           |                                     |                                     | 3 pounds, 7-<br>inch expo-<br>sure. |   |
| Reroofing with wood shingles..... |                                     |                                     |                                     | Amount required de-<br>pends on size of<br>shingles used. |

<sup>1</sup> Quantities required vary slightly according to distance shingles are exposed to weather.

### HISTORY OF THE PROJECT

Pursuant to a request of the Red Cedar Shingle Bureau a general conference of manufacturers, distributors, and consumers of red cedar shingles met in Seattle, Wash., on March 27, 1931, and approved a commercial standard for their product that was later accepted by the trade.

A survey of adherence to the standard, covering the first nine months of 1932 indicated its use by an unweighted average of 97.5 percent of those reporting and numerous comments were received as to its stabilizing effect.

Early in 1933, applications were received from the California Redwood Association and the Southern Cypress Manufacturers' Association for admittance of California redwood and tidewater red cypress under the scope of this standard, thus providing for the inclusion of the three principal shingle species under a common standard to the mutual advantage of all concerned.

The standing committee accordingly approved this action.

### STANDING COMMITTEE

The standing committee appointed to represent all interests of the industry and consider revision of the standard has been broadened to include a representative from the cypress and redwood manufacturers.

No definite revision interval is provided, this being left to the discretion of the committee whose membership is as follows:

GEORGE A. BERGSTROM (chairman), C. B. Lumber & Shingle Co.  
 CHARLES H. INGRAM, Weyerhaeuser Timber Co.  
 A. J. MORLEY, Saginaw Timber Co.  
 C. H. GRIFFEN, Jr., California Redwood Association.  
 J. F. WIGGINTON, Southern Cypress Manufacturers' Association.  
 J. D. GILES, Creo-Dipt Co., Inc.  
 F. A. HOFHEINS, Weatherbest Stained Shingle Co.



J. A. EDGE CUMBE, Edham Co., Inc.  
 ARTHUR E. LANE, Arthur E. Lane Mill Service.  
 FINDLAY M. TORRENCE, Ohio Association of Retail Lumber Dealers.  
 AL HAGER, National Retail Lumbermen's Association.  
 W. C. MILLER, Western Retail Lumbermen's Association.  
 JOSHUA H. VOGEL, M.A.I.A., Baker, Vogel & Roush.  
 HARRY H. STEIDLE (ex-officio secretary), Bureau of Standards.

## EFFECTIVE DATE

The standard became effective on September 15, 1933.

## LABELING

Figure 1 illustrates how an important group of producers have arranged to certify complete compliance with the commercial stand-



ard. Shingles produced by members of this group to conform to the standard, may be readily identified by copies of the following label appearing on each bundle. It is understood that two other groups will use substantially the same label.

FOR IMMEDIATE RELEASE

STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL  
JULIUS ROSENTHAL  
ALBANY, N. Y.

NEW YORK, N. Y., [illegible]

## ACCEPTANCE OF COMMERCIAL STANDARD

This sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date\_\_\_\_\_

DIVISION OF TRADE STANDARDS,  
BUREAU OF STANDARDS,  
*Washington, D.C.*

GENTLEMEN: Having considered the statements on the reverse side of this sheet, we accept the Commercial Standard CS31-33 as our standard of practice in the

{production<sup>1</sup>  
distribution<sup>1</sup>} of wood shingles.  
use<sup>1</sup>

We will assist in securing its general recognition and use, and will cooperate with the standing committee to effect revisions of the standard when necessary.

Signature \_\_\_\_\_

(Kindly typewrite or print the following lines)

Title\_\_\_\_\_

Company\_\_\_\_\_

Street address\_\_\_\_\_

City and State\_\_\_\_\_

<sup>1</sup> Please designate which group you represent by drawing lines through the other two. In the case of related interests, trade papers, colleges, etc., desiring to record their general approval the words "in principle" should be added after the signature.

## TO THE ACCEPTOR

The following points are given in answer to the usual questions arising in connection with the acceptance form:

1. Commercial standards are commodity specifications voluntarily established by mutual consent of the industry. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the industry as a whole, their provisions through usage soon become established as trade customs.

2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish for specific commodities nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The function performed by the Department of Commerce in the establishment of a commercial standard is fourfold; first, to act as an unbiased coordinator to bring all branches of the industry together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard; and fourth, to add all possible prestige to the enterprise by publication and promulgation when accepted by the industry.

When the standard has been endorsed by companies representing a satisfactory majority of production, the success of the project is announced. If, however, in the opinion of the standing committee of the industry or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.



## ACCEPTORS

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Individuals and organizations listed below have indicated in writing, acceptance of this specification as their standard of practice, but such endorsement does not signify that they may not find it necessary to deviate from the standard, or that they guarantee their products to conform to the requirements of this standard.

### ASSOCIATIONS

|  |  |
|--|--|
| American Forest Products Industries, Inc., Washington, D.C.                | Northwestern Lumbermens Association, Minneapolis, Minn.                                  |
| American Specification Institute, Chicago, Ill.                            | Ohio Association of Retail Lumber Dealers, Xenia, Ohio.                                  |
| California Redwood Association, San Francisco, Calif.                      | Red Cedar Shingle Bureau, Seattle, Wash.   |
| California Retail Lumbermens Association, Garden Grove, Calif.             | Red Cedar Shingle Bureau (B.C. Division), Vancouver, British Columbia.                   |
| Florida Lumber & Millwork Association, Orlando, Fla.                       | Retail Lumber Dealers Association of Indiana, Crown Point, Ind.                          |
| Kentucky Retail Lumber Dealers Association, Louisville, Ky. (in principle) | Southern Cypress Manufacturers Association, Jacksonville, Fla.                           |
| Lumbermen's Exchange of City of Philadelphia, Philadelphia, Pa.            | Tennessee Lumber Millwork & Supply Dealers Association, Nashville, Tenn. (in principle). |
| Central Missouri Association Retail Lumber Dealers, Jefferson City, Mo.    | Lumbermen's Association of Texas, Houston, Tex.  |
| Michigan Retail Lumber Dealers Association, Lansing, Mich.                 | United Roofing Contractors Association, Chicago, Ill. (in principle).                    |
| Mountain States Lumber Dealers Association, Denver, Colo.                  | Virginia Lumber & Building Supply Dealers Association, Richmond, Va. (in principle).     |
| National Association of Builders Exchanges, Washington, D.C.               | West Coast Lumbermen's Association, Seattle, Wash. (in principle).                       |
| National Lumber Manufacturers Association, Portland, Ore. (in principle).  | Wisconsin Retail Lumbermen's Association, Milwaukee, Wis.                                |
| National Lumber Manufacturers Association, Washington, D.C.                |  |
| Northeastern Retail Lumbermens Association, Rochester, N.Y.                |  |

### FIRMS

|   |  |
|---|--|
| Acme Steel Co., Chicago, Ill. (in principle).       | American Lumberman, Seattle, Wash. (in principle). |
| Adams, I. Eugene, Baltimore, Md. (in principle).    | Anderson Lumber Co., Logan, Utah.                  |
| Adams Lumber Co., Inc., The Geo., Inwood, L.I.      | Anderson Lumber Co., Ogden, Utah.                  |
| Adams Lumber Co., Inc., Noah, Oakland, Calif.       | Anderson, Jones, Biscoe & Whitman, Boston, Mass.   |
| Addison Rudesal Co., Atlanta, Ga.                   | Antrim Lumber Co., St. Louis, Mo.                  |
| Allen, Harris C., San Francisco, Calif.             | Arkansas Valley Lumber Co., The, Wichita, Kans.    |
| Ahlers, John A., Baltimore, Md.                     | Arlington Mill Co., Arlington, Wash.               |
| Allen Lumber Co., Peoria, Ill.                      | Armstrong, Kyle W., Columbus, Ohio.                |
| Allison & Allison, Los Angeles, Calif.              | Armstrong-Walker Lumber Co., Terre Haute, Ind.     |
| Aloha Lumber Co., Aloha, Wash.                      | Art Stained Shingle Co., Inc., Buffalo, N.Y.       |
| Alter Lumber & Supply Co., Alma, Nebr.              | Asheim, Leonard, Bridgeport, Conn.                 |
| Altfillisch, Charles, Decorah, Iowa.                | Atlas Lumber Co., Omaha, Nebr.                     |
| American Roofer, The, Chicago, Ill. (in principle). | Augusta Lumber Co., Augusta, Ga.                   |
|   | Austin, W. Horace, Long Beach, Calif.              |

- Bagnal-Nettles Builders Supply Co., Columbia, S.C.  
 Bailey Lumber Co., Bluefield, W.Va.  
 Baker & Vogel & Roush, Seattle, Wash. (in principle).  
 Baldridge Lumber Co., J. C., Albuquerque, N.Mex.  
 Banwell, W. P., Philadelphia, Pa.  
 Barnes Lumber Co., W. F. & J. F., Waco, Tex.  
 Barr Lumber Co., Santa Ana, Calif.  
 Barron Shingle Co., Port Angeles, Wash.  
 Barton, LeRoy, New York, N.Y.  
 Bass, Obadiah, Lexington, Ky.  
 Bauhan, Rolf W., Princeton, N.J.  
 Baxter & Co., C. B., Kansas City, Mo.  
 Beatty Lumber Co., I.N.R., Morris, Ill.  
 Benedict, E. E., Waterbury, Conn.  
 Beuttler & Arnold, Sioux City, Iowa. (in principle).  
 Bial, Geo. F., Hasbrouck Heights, N.J.  
 Big Salkehatchie Cypress Co., The, Barnville, S.C.  
 Bishop, Horatio W., Los Angeles, Calif.  
 Blackburn, Robert, Milwaukee, Wis.  
 Blackstock Lumber Co., Seattle, Wash.  
 Blithe Wesley Leshner, Philadelphia, Pa.  
 Bloedel Donovan Lumber Mills, Bellingham, Wash.  
 Bogner, Harry, Milwaukee, Wis.  
 Botsford Lumber Co., Winona, Minn.  
 Brainerd, Harry, New York, N.Y.  
 Bratlie Bros. Mill Co., Ridgefield, Wash.  
 Brattin & Son, F. J., Shepherd, Mich.  
 Brazelton Lumber Co., Waco, Tex.  
 Brazier, Clarence Wilson, Chester, Pa.  
 Brew Manufacturing Co., Puyallup, Wash.  
 Brewster & Son, Inc., Ridgefield Park, N.J.  
 Brown Lumber Co., Inc., Dan, Anderson, S.C.  
 Brown, W. J., Cedar Rapids, Iowa.  
 Buchanon & Smock Lumber Co., Asbury Park, N.J.  
 Buckingham, C. W., Oklahoma City, Okla.  
 Buechner & Orth, St. Paul, Minn. (in principle).  
 Burgess, N. P., Weott, Calif.  
 Burns Shingle Co., Seattle, Wash.  
 Burritt Co., Bridgeport, Conn.  
 Burrow Lumber Co., at Canyon, Happy, Dalhart, Perryton, Tex., and Beaver, Okla.  
 Bush & Miller, Vancouver, British Columbia.  
 Cabot, Inc., Samuel, Boston, Mass.  
 Cameron & Co., Inc., Wm., Waco, Tex.  
 Campbell Lumber & Manufacturing Co., The, Toledo, Ohio.  
 Canadian Western Lumber Co., Ltd., Fraser Mills, British Columbia, Canada.  
 Cannon & Fetzer, Salt Lake City, Utah.  
 Capilano Timber Co., Ltd., Vancouver, British Columbia, Canada.  
 Carbon River Shingle Co., Fairfax, Wash.  
 Carlisle Lumber Co., Onalaska, Wash.  
 Carlsborg Mill & Timber Co., Carlsborg, Wash.  
 Carpenter-Wilson Co., Inc., Minneapolis, Minn.  
 Carr & Neff Lumber Co., Scottsbluff, Nebr.  
 Carroll, John J., Ventnor, N.J.  
 Cates & Branson, Branscomb, Calif.  
 C. B. Lumber & Shingle Co., Everett, Wash.  
 Central Warehouse Lumber Co., Minneapolis, Minn.  
 Century Lumber Co., Des Moines, Iowa.  
 Champlin, R. A., Enid, Okla.  
 Chapin, Rollin C., Minneapolis, Minn.  
 Chapin Lumber Co., The, Aurora, Colo.  
 Charlottesville Lumber Co., Inc., Charlottesville, Va.  
 Chattanooga Sash & Millwork Co., Chattanooga, Tenn.  
 Chelan Lumber Co., Chelan, Wash.  
 Chenault & Sons, A. L., Port Angeles, Wash.  
 Chew Shingle Co., Ltd., Joseph, Vancouver, British Columbia.  
 Child, Harry C., Sayre, Pa.  
 Chinook Lumber Co., Chinook, Mont.  
 Citizen Lumber Co., Sturgis, Mich.  
 Citizens Mill & Lumber Co., Ventura, Calif.  
 Clark County Lumber Co., The, Springfield, Ohio.  
 Clark and Wilson Lumber Co., of Delaware, Linnton, Oreg.  
 Clay & Hill Lumber Co., Brookfield, Mo.  
 Coast Cedar Shingle Co., Seattle, Wash.  
 Cockfield, Brown & Co., Ltd., Vancouver, British Columbia, Canada (in principle).  
 Coit, Robert, Boston, Mass.  
 Colburn Lumber Co., Enos, Green Bay Wis.  
 Columbia Lumber Co., Seattle, Wash.  
 Conover Lumber Co., Keyport, N.J.  
 Conrad & Cummings, Binghamton, N.Y.  
 Conrow, H. S., Wichita, Kans.  
 Corbett Mill Co., Anacortes, Wash.  
 Corddry Co., Inc., The, Snow Hill, Md.  
 Costello Lumber Co., James, Liberty, Mo.  
 Cottonwood Lumber Co., Cottonwood, Ariz.  
 Cowles and Colean, Chicago, Ill.  
 Creo-Dipt Co., Inc., North Tonawanda, N.Y.

- Crescent Shingle Co., Kelso, Wash.  
 Cresson Lumber Co., Cresson, Pa.  
 Cross Austin & Ireland Lumber Co., Brooklyn, N.Y.  
 Crown-Willamette Paper Co., Portland, Oreg. (in principle).  
 Curran Bros., Pomona, Calif.  
 Curtis Lumber Co., Seattle, Wash.  
 Daniel, J. E., Jr., Dewitt, Ark.  
 Davenport Peters Co., Boston, Mass.  
 Dekle Lumber Co., Jacksonville, Fla.  
 DeJarnette, Charles Wagner, Des Moines, Iowa.  
 Dickerson Lumber Co., Huntington, W. Va.  
 Dix Lumber Co., N. Cambridge, Mass.  
 Dodds Lumber Company, Omaha, Nebr.  
 Dodge & Morrison, New York, N.Y.  
 Dolbeer & Carson Lumber Co., San Francisco, Calif.  
 Doust Co., George B., Seattle, Wash.  
 Dover Lumber Co., Dover, N.J.  
 Dutton Lumber Corporation, A. C., Poughkeepsie, N.Y.  
 Easterly Lumber Co., Chas., Carbon-dale, Ill.  
 East Hoquiam Shingle Co., Hoquiam, Wash.  
 East Side Logging Co., Portland, Oreg.  
 Eastern Railway & Lumber Co., Centralia, Wash.  
 Eastwood Lumber Co., Inc., Albert S. Providence, R.I.  
 Eatonville Lumber Co., Eatonville, Wash.  
 Eclipse Lumber Co., Clinton, Iowa.  
 Economy Lumber Co., Inc., Christiansburg, Va.  
 Edwards & Saywood, Atlanta, Ga.  
 Elk River Mill & Lumber Co., Falk, Humboldt, Calif.  
 Elliott Lumber Co., Lodi, Calif.  
 Emery, H. E., Nyack, N.Y.  
 Evans, Ashton &, Salt Lake City, Utah.  
 Ewing Lumber Co., Effingham, Ill.  
 Eyre Shingle Co., Arlington, Wash.  
 Fairweather, Clement W., Metuchen, N.J.  
 Farmers Lumber Co., La Grange, Tex.  
 Fellows Sales Co., Sioux Falls, S. Dak.  
 Finch, Pruy & Co., Glens Falls, N.Y.  
 Florida Louisiana Red Cypress Co., Jacksonville, Fla.  
 Fluhrer Bros., Inc., Mayger, Oreg.  
 Foxworth-Galbraith Lumber Co., Amarillo, Tex.  
 Frey Planing Mill Co., The, Louisville, Ky.  
 Friend & Terry Lumber Co., Sacramento, Calif.  
 Fuller Goodman Co., Oshkosh, Wis.  
 Galt Grain Co., Galt, Ill.  
 Garden Grove Lumber & Cement Co., Garden Grove, Calif.  
 Graham & Gerber, Bellingham, Wash.  
 Granger & Bollenbacher, Chicago, Ill.  
 Gray Lumber & Shingle Co., Seattle, Wash.  
 Gray Shingle Co., Robert, Hoquiam, Wash.  
 Grays Harbor Sales Corporation, Hoquiam, Wash.  
 Green Bay Lumber Co., Maquoketa, Iowa.  
 Green Lumber & Shingle Co., Quilcene, Wash.  
 Grogan-Robinson Lumber Co., Great Falls, Mont.  
 Guernsey-Westbrook Co., The, Hartford, Conn.  
 Guerrier Shingle Co., Chehalis, Wash.  
 Hager & Cove Lumber Co., Lansing, Mich.  
 Hahn, Stanley Worth, Chicago, Ill. (in principle).  
 Hamilton Lumber Co., The, Hamilton, Ohio.  
 Hammond Cedar Co., Ltd., Hammond, British Columbia.  
 Hammond Lumber Co., Los Angeles, Calif.  
 Hammond Lumber Co., Portland, Oreg.  
 Hammond Tillamook Lumber Co., Portland, Oreg.  
 Hanan, Chas., Macomb, Ill.  
 Hanify, Co., J. R., San Francisco, Calif.  
 Hansen Lumber Co., H. L., Galesburg, Ill.  
 Hardin, H. H., Forth Worth, Tex.  
 Harper & West, Boston, Mass.  
 Harrison Co., The W. H., Grand Island, Nebr.  
 Hart & Shape, New York, N.Y.  
 Hartwick-Woodfield Co., Jackson, Mich.  
 Hawkeye Lumber & Coal Co., Cedar Rapids, Iowa.  
 Hawkeye Lumber Co., Oskaloosa, Iowa.  
 Hawkins Companies, Inc., Boston, Mass.  
 Hawk Springs Lumber Co., Hawk Springs, Wyo.  
 Helfensteller, Hirsch & Watson, St. Louis, Mo.  
 Hensel, Otto G., Arlington, Wash.  
 Heyer Sons, W. H., Sumner, Iowa.  
 Hinckley & Son Co., John, Yarmouth-port and Hyannis, Mass.  
 Hoffman & Baldwin, West Chester, Pa.  
 Hoffmann Lumber Co., Pittsburgh, Pa.  
 Hoke, Karl Buckingham, Toledo, Ohio.  
 Holcomb Bros., Sycamore, Ill.  
 Holmes Eureka Lumber Co., San Francisco, Calif.  
 Homalko Logging Co., Ltd., Vancouver, British Columbia, Canada.  
 Home Lumber & Coal Co., Dixon, Ill.  
 Hubbard & Carmichael Bros., Inc., San Jose, Calif.  
 Hunter, T. H., Jr., Beaumont, Tex.  
 Hunter Lumber Co., Chillicothe, Ill.



- Hunting Lumber Co., R. D., Cedar Rapids, Iowa.  
 Huntington Shingle Co., Mapleton, Oreg.  
 Hunting Merritt Lumber Co., Ltd., Vancouver, British Columbia.  
 Illinois Lumber & Material Dealers Association, Springfield, Ill.  
 Independent Lumber Co., The, Grand Junction, Colo.  
 Ingram, Inc., W. F., Kalama, Wash.  
 Inter-City Lumbermen's Club, South Bend, Ind.  
 Interstate Lumber Co., Missoula, Mont.  
 Iowa Builders Supply Co., Cedar Rapids, Iowa.  
 Irving Co., J. S., Westfield, N.J.  
 Jackson Lumber Co., J. H., Rockaway, N.J.  
 Jacobs, Harry Allan, New York, N.Y.  
 Jamison Lumber & Shingle Co., Everett, Wash.  
 Jamison Mill Co., Everett, Wash.  
 Jerns, N., Bellingham, Wash.  
 Jeter Lumber Co., Cameron, Tex.  
 Johnson & Son, Joe E., Waco, Tex.  
 Johnstone & Eggert, North Tonawanda N.Y.  
 Kelly, V. S., Bellingham, Wash.  
 Kelley-Maverick Co., San Antonio, Tex.  
 Kelsey, Jr., S. T., Smith River, Calif.  
 Kerriston Shingle Co., Kerriston, Wash.  
 Keystone Shingles & Lumber, Ltd., New Westminster, British Columbia.  
 Kimberlin, C. W., Owensboro, Ky.  
 Kilpatrick, Thomas, Estate, Vancouver, British Columbia.  
 Knepp, H. E., Lewistown, Pa.  
 Kratz Shingle Co., Henry, Clatskanie, Oreg.  
 Krause & Managan, Inc., Lake Charles, La.  
 Krotter Co., F. C., Palisade, Nebr.  
 Kruckemeyer & Strong, Cincinnati, Ohio.  
 LaCrosse Lumber Co., Louisiana, Mo.  
 Lafferty Shingle Co., Coeur d'Alene, Idaho.  
 Lake Washington Shipyards, Houghton, Wash.  
 Lambert Lumber Co., Leavenworth, Kans.  
 Lampland Lumber Co., St. Paul, Minn.  
 Lane Mill Service, Arthur E., New York, N.Y.  
 Lawrence, Holford, Allyn & Bean, Portland, Oreg.  
 Lay Lumber Co., H. J., Kewaskum, Wis.  
 Leach Brothers, Inc., Joliet, Ill.  
 Leachman Lumber Co., Des Moines, Iowa.  
 Lewis Shingle Co., Inc., J. A., Wheeler, Oreg.  
 Leybold-Smith Shingle Co., Inc., Tacoma, Wash.  
 Lind, Olander, Kansas City, Kans.  
 Lingo Lumber Co., Dallas, Tex.  
 Long-Bell Lumber Sales Corporation, Longview, Wash.  
 Lovadt, George S., Philadelphia, Pa.  
 Lovell-Scholfield Lumber Co., The, Eldora, Iowa.  
 Lowell-Whipple Co., The, Worcester, Mass.  
 Lumber & Millword Co., of Philadelphia, The, Philadelphia, Pa.  
 Lyman-Hawkins Lumber Co., Akron Ohio.  
 Lyons Co., R. W., Hindsboro, Ill.  
 Lyon-Gray Lumber Co., Dallas, Tex.  
 Mackie & Barnes, Inc., Seattle, Wash.  
 Mackie Mill Co., Markham, Wash.  
 Mack, Herman L., Trenton, N.J.  
 Madison Lumber & Mill Co., Lewiston, Idaho.  
 Magney & Tusler, Inc., Minneapolis, Minn.  
 Maisler Bros. Lumber Co., Fresno, Calif.  
 Manasse, DeWitt J., Highland Park, Ill. (in principle).  
 Mann, A. R., Hutchinson, Kans.  
 Marona Mill Co., Acme, Wash.  
 Marshall-Wright Lumber Co., Inc., Ionia, Mich.  
 Mason & Co., George D., Detroit, Mich. (in principle).  
 Massar Lumber Co., Mount Vernon, Wash.  
 Mauk Seattle Lumber Co., Seattle, Wash.  
 Maman Russell & Crowell, St. Louis, Mo.  
 McCormick-Hannah Lumber Co., Eustis, Fla.  
 McFarland Lumber Co. of Philadelphia, Philadelphia, Pa.  
 McIntyre & Son, W. P., Fortuna, Calif.  
 McMaster-Horton Cedar Manufacturing Co., Ltd., Victoria, British Columbia.  
 McMaster Shingle Co., John, Marysville, Wash.  
 McNair Shingle Co., Ltd., The Robert, Vancouver, British Columbia.  
 Melville Lumber Co., J. H., Monte Vista, Colo.  
 Merced Lumber Co., Merced, Calif.  
 Merrill & Ring Lumber Co., Seattle, Wash.  
 Mershon Lumber Co., John D., Saginaw, Mich.  
 Michigan Stained Shingle Co., Inc., Grand Rapids, Mich.  
 Midwest Lumber Co., Dubuque, Iowa.  
 Miller & Sons, W. H., Madison, Ind.  
 Miles Lumber & Coal Co., A. W., Livingston, Mont.  
 Miller Cedar Lumber Co., E. C., Aberdeen, Wash.  
 Miller & Yeager, Terre Haute, Ind.  
 Milligan Co., D., Jefferson, Iowa.



- Milwaukie Lumber & Shingle Co., Milwaukie, Ore.  
 Mitchell & Co., M. F., Carlotta, Calif.  
 Montana State College, Bozeman, Mont. (in principle).  
 Montgomery & Patterson, Charleston, W.Va.  
 Moore & Williams, Jacksonville, Fla.  
 Morgan, Dillon & Lewis, Atlanta, Ga.  
 Morgan Shingle Co., R. M., Port Angeles, Wash.  
 Morrison, Gay, Beaumont, Tex.  
 Morrison, Merrill & Co., Salt Lake City, Utah.  
 Motz Lumber Co., Monessen, Pa.  
 Mud Bay Logging Co., Olympia, Wash. (in principle).  
 Muhlenberg, Yerkes & Muhlenberg, Reading, Pa.  
 Mundie & Jensen, Chicago, Ill.  
 Mutual Lumber Co., Bucoda, Wash.  
 Nassau Suffolk Lumber & Supply Corporation, Amityville, N.Y.  
 Nebraska, University of, Lincoln, Nebr.  
 Nelson, W. F., Dallas, Tex.  
 Nettleton Lumber Co., Seattle, Wash.  
 Newbegin, J. G., Tacoma, Wash.  
 New Rochelle Coal & Lumber Co., New Rochelle, N.Y.  
 New York State Department of Public Works, Albany, N.Y.  
 Northern Lumber Co., Estherville, Iowa.  
 North Hudson Manufacturing Co., North Bergen, N.J.  
 North Western Lumber Co., Hoquiam, Wash.  
 Olympia Shingle Co., Olympia, Wash.  
 Oregon Shingle Co., Portland, Ore.  
 Ortmeyer Lumber Co., The, Wichita, Kans.  
 Pacific Lumber Co., The, San Francisco, Calif.  
 Pacific National Lumber Co., Tacoma, Wash.  
 Pacific Shingle Co., Coquitlam, British Columbia.  
 Pacific States Lumber Co., Tacoma, Wash.  
 Pacific Timber Co., Everett, Wash.  
 Panama Shingle Co., Olympia, Wash.  
 Parrish & Co., C. A., Spencer, W.Va.  
 Parsons Lumber & Manufacturing Co., R. L., Decatur, Ala.  
 Patterson Co., J. H., Rockford, Ill.  
 Peaslee, Horace W., Washington, D.C.  
 Pehrson, G. A., Spokane, Wash.  
 Perry Lumber Co., Lincoln, Nebr.  
 Piper, F. Stanley, Bellingham, Wash.  
 Pollock Lumber Co., Fort Myers, Fla.  
 Polson Lumber & Shingle Co., Hoquiam, Wash.  
 Pope, John Russell, New York, N.Y.  
 Porter's Lumber Yard, Salem, Ill.  
 Potter Bros., Morrison, Ill.  
 Potter Lumber & Supply Co., The, Worthington, Ohio.  
 Prairie du Rocher Lumber Co., Prairie du Rocher, Ill.  
 Prosperity Shingle Co., Ltd., North Vancouver, British Columbia.  
 Putnam & Jones, Carthage, Mo.  
 Quality Shingle Co., Edmonds, Wash.  
 Red Cedar Roofing Co., Ltd., Vancouver, British Columbia.  
 Reed & Lorlett, Oakland, Calif.  
 Reed Mill Co., Shelton, Wash.  
 Reid, William H., Jr., Billings, Mont.  
 Riner Lumber Co., Kansas City, Mo.  
 Risser Lumber Co., Art, Paris, Ill.  
 Riverside Lumber Co., Knoxville, Tenn.  
 Rockford Lumber & Fuel Co., Rockford, Ill.  
 Rogers Lumber Co., The T. H., Oklahoma City, Okla.  
 Roles Bros. Shingle Co., Linnton, Ore.  
 Rothschild, LeRoy B., Philadelphia, Pa.  
 Ruggles Lumber Co., Carlos, Springfield, Mass.  
 Runels Construction Co., R. E., Lowell, Mass.  
 Saginaw Timber Co., Aberdeen, Wash.  
 San Diego Lumber Co., San Diego, Calif.  
 Sanford & Zartman Lumber Co., Freeport, Ill.  
 Santa Fe Lumber Co., San Francisco, Calif.  
 Sarvis, Lewis J., Battle Creek, Mich.  
 Seamell, Ralph E., Topeka, Kans.  
 Schoeneman Bros. Co., Howarden, Iowa.  
 Schoeppe, Edward, Philadelphia, Pa.  
 Schulzke, William H., Moline, Ill.  
 Scruggs-Guhleman Lumber Co., Jefferson City, Mo.  
 Searle & Chapin Lumber Co., Lincoln, Nebr.  
 Seattle Cedar Lumber Manufacturing Co., Seattle, Wash.  
 Seymour Commercial Co., Inc., The, Seymour, Conn.  
 Shelton-Mason County Commercial Club, Shelton, Wash.  
 Skagit Mill Co., Lyman, Wash.  
 Smith Lumber Co., Fred A., Rockford, Ill.  
 Smith & Sons, J. E., Philadelphia, Pa.  
 Smith Lumber & Shingle Co., M. R., Seattle, Wash.  
 Snider Shingle Co., Carlton, Ore.  
 Snook-Veith Lumber Co., The, St. Bernard, Ohio.  
 Snoqualmie Falls Lumber Co., Snoqualmie Falls, Wash.  
 Solie Lumber Co., Janesville, Wis.  
 Sones Lumber Co., El Centro, Calif.  
 Sonnemann & Son, C. G., Vandalia, Ill.  
 Sound Timber Co., The, Seattle, Wash. (in principle).  
 South Side Lumber & Supply Co., The, Toledo, Ohio.  
 Sowers-Benbow Lumber Co., The, Columbus, Ohio.

- Spahn & Rose Lumber Co., Dubuque, Iowa.
- Spencer Lumber Co., Gastonia, N.C.
- Springfield Lumber Corporation, Springfield, Mass.
- Squires, Frank C., Topeka, Kans. (in principle).
- Standard Lumber & Supply Co., Fort Wayne, Ind.
- Star Lumber Co., Liberal, Kans.
- Statesir Lumber Co., Freehold, N.J.
- Sterling Lumber Co., Ltd., Vancouver, British Columbia.
- Stoetzel, Ralph E., Chicago, Ill.
- Streeter & Co., D. D., Brooklyn, N.Y.
- Strobel, John F., Rochester, N.Y.
- Strong & Hale Lumber Co., The, Portland, Conn.
- Sunshine Lumber & Supply Co., St. Petersburg, Fla.
- Super Shingle Co., The, Everett, Wash.
- Swan Lake Moulding Co., Klamath Falls, Oreg.
- Sweets Catalogue Service, New York, N.Y. (in principle).
- Temple Lumber Co., Houston, Tex.
- Thompson Lumber Co., Minneapolis, Minn.
- Thurston-Flavelle Ltd., Port Moody, British Columbia.
- Todd Lumber Co., R. H., Ocala, Fla.
- Tolles & Co., J. H., Nashua, N.H.
- Tomlinson, H. Webster, Joliet, Ill.
- Tum-A-Lum Lumber Co., Walla Walla, Wash.
- Tuttle Bros., Inc., Westfield, N.J.
- Union Ave. Shingle Co., Portland, Oreg.
- Union Lumber Co., San Francisco, Calif.
- United Mills, Ltd., New Westminster, British Columbia, Canada.
- Uddike-Kennedy Co., Inc., Trenton, N.J.
- Vanderhoof-Libby, Inc., Seattle, Wash.
- Van Pelt, John V., Patchogue, N.Y.
- Van Winkle Bromley Lumber Co., Paterson, N.J.
- Varner Bros. Lumber Co., Dallas, Tex.
- Velde Lumber Co., Pekin, Ill.
- Vickers Lumber Co., T. W., Sheridan, Wyo.
- Virginia Polytechnic Institute, Blacksburg, Va.
- Von Tobel Lumber Co., Ed., Las Vegas, Nev.
- Wachter, Harry W., Toledo, Ohio.
- Wade-Talcott Lumber Co., Tulsa, Okla.
- Wagner Lumber Co., Monroe, Wash.
- Wallace Lumber & Manufacturing Co., Sultan, Wash.
- Washington Surveying and Rating Bureau, Seattle, Wash. (in principle).
- Weatherbest Stained Shingle Co., Inc., North Tonawanda, N.Y.
- Weinel Lumber Co., August F., Columbia, Ill.
- West Coast Lumberman, Seattle, Wash. (in principle).
- West Coast Lumber Co., Sarasota, Fla.
- Western Cedar Shingle Co., Anacortes, Wash.
- Westerman Lumber Co., H. E., Montgomery, Minn.
- Western Lumber Co., San Diego, Calif.
- West Frankfort Lumber Co., West Frankfort, Ill.
- West Palm Beach Lumber Co., West Palm Beach, Fla.
- West Side Coal & Lumber Co., Bloomington, Ill.
- West Side Lumber Co., Atlantic City, N.J.
- Weyerhaeuser Sales Co., St. Paul, Minn.
- Weyerhaeuser Timber Co., Everett, Wash.
- Weyerhaeuser Timber Co., Tacoma, Wash.
- Whatecom Falls Mill Co., Bellingham, Wash.
- Wheelwright Lumber Co., Ogden, Utah.
- White River Lumber Co., Enumclaw, Wash.
- Willamette Valley Lumber Co., Dallas, Oreg.
- Willapa Harbor Lumber Mills, Raymond, Wash.
- Willatsen, Andrew, Seattle, Wash.
- Williams, Earl, Carlotta, Calif.
- Williamson & Co., Thos., Topeka, Kans.
- Willson, Fred F., Bozeman, Mont.
- Wilson Cypress Co., Palatka, Fla.
- Wisconsin's Transfer Yard, Oshkosh, Wis.
- Wisenall, B. T., Covington, Ky.
- Wolverine Creosoted Products Co., Detroit, Mich.
- Wool & Iverson, Inc., Hobart, Wash. (in principle).
- Woodbridge Lumber Co., Woodbridge, N.J.
- Wood Construction Publishing Co., Xenia, Ohio. (in principle).
- Wood & Son, E. J., Clarksburg, W.Va.
- Woodlawn Mill Co., Hoquiam, Wash.
- Wood Lumber Co., E. K., Oakland, Calif.
- Wood Lumber Co., Birmingham, Ala.
- Woodson Lumber Co., Caldwell, Tex.
- Wright, Frank H., Detroit, Mich. (in principle).
- Wyman Lumber Co., M. A., Seattle, Wash.
- Zoller & Muller, New York, N.Y.

## GOVERNMENT

- Government of the District of Columbia, Washington, D.C.
- Department of Interior, Washington, D.C.
- U.S. Treasury Department, Washington, D.C.
- Veterans Administration, Washington, D.C.
- War Department, Washington, D.C.

## COMMERCIAL STANDARDS

| CS No. | Item  | Cs No. | Item   |
|--------|---|--------|--|
| 0-30.  | The commercial standards service and its value to business. | 22-30. | Builders' hardware (nontemplate).              |
| 1-32.  | Clinical thermometers (second edition).                     | 23-30. | Feldspar.                                      |
| 2-30.  | Mopsticks.  | 24-30. | Standard screw threads.                        |
| 3-28.  | Stoddard solvent.   | 25-30. | Special screw threads.                         |
| 4-29.  | Staple porcelain (all-clay) plumbing fixtures.              | 26-30. | Aromatic red cedar closet lining.              |
| 5-29.  | Steel pipe nipples.   | 27-30. | Plate glass mirrors.                           |
| 6-31.  | Wrought iron pipe nipples (second edition).                 | 28-32. | Cotton fabric tents, tarpaulins and covers.    |
| 7-29.  | Standard weight malleable iron or steel screwed unions.     | 29-31. | Staple seats for water-closet bowls.           |
| 8-30.  | Plain and thread plug and ring gage blanks.                 | 30-31. | Colors for sanitary ware.                      |
| 9-33.  | Builders' template hardware (second edition).               | 31-33. | Wood shingles (second edition).                |
| 10-29. | Brass pipe nipples.   | 32-31. | Cotton cloth for rubber and pyroxylin coating. |
| 11-29. | Regain of mercerized cotton yarns.                          | 33-32. | Knit underwear (exclusive of rayon).           |
| 12-33. | Fuel oils (second edition).                                 | 34-31. | Bag, case and strap leather.                   |
| 13-30. | Dress patterns.   | 35-31. | Plywood.                                       |
| 14-31. | Boys' blouses, button-on waists, shirts and junior shirts.  | 36-33. | Fourdrinier wire cloth (second edition).       |
| 15-29. | Men's pajamas.  | 37-31. | Steel bone plates and screws.                  |
| 16-29. | Wall paper.   | 38-32. | Hospital rubber sheeting.                      |
| 17-32. | Diamond core drill fittings (second edition).               | 39-32. | Wool and part wool blankets.                   |
| 18-29. | Hickory golf shafts.  | 40-32. | Surgeons' rubber gloves.                       |
| 19-32. | Foundry patterns of wood (second edition).                  | 41-32. | Surgeons' latex gloves.                        |
| 20-30. | Staple vitreous china plumbing fixtures.                    | 42-32. | Fiber insulating board.                        |
| 21-30. | Interchangeable ground glass joints.                        | 43-32. | Grading of sulphonated oils.                   |
|        |   | 44-32. | Apple wraps.                                   |
|        |   | 45-33. | Douglas fir plywood.                           |
|        |   | 46-33. | Hosiery lengths.                               |

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice in their industry, may secure copies of the above standards, while the supply lasts, by addressing the Division of Trade Standards, Bureau of Standards, Washington, D.C.

