

U. S. DEPARTMENT OF COMMERCE

DANIEL C. ROPER, Secretary

NATIONAL BUREAU OF STANDARDS

LYMAN J. BRIGGS, Director

WOOD SHINGLES

(RED CEDAR, TIDEWATER RED CYPRESS,  
CALIFORNIA REDWOOD)

(Third Edition)

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COMMERCIAL STANDARD CS31-35

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Effective Date, September 15, 1933

Reaffirmed May 15, 1935



A RECORDED STANDARD OF THE INDUSTRY

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1935

## PROMULGATION

of

COMMERCIAL STANDARD CS31-35

for

## WOOD SHINGLES

(Red Cedar, Tidewater Red Cypress, California Redwood)

(Third Edition)

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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 U. S. Department of Commerce, through the National Bureau of Standards, the revised standard as shown herein, which became effective on September 15, 1933.

Reaffirmation by the standing committee was announced May 15, 1935.

Promulgation recommended.

I. J. Fairchild,

*Chief, Division of Trade Standards.*

Promulgated.

Lyman J. Briggs,

*Director, National Bureau of Standards.*

Promulgation approved.

Daniel C. Roper,

*Secretary of Commerce.*

# WOOD SHINGLES

(Red Cedar, Tidewater Red Cypress, California Redwood)

(Third Edition)

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## COMMERCIAL STANDARD CS31-35

### 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.

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<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 rebuted 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<sup>2</sup>

14. All random width shingles shall be packed flat in straight courses and the unit shall be the "square" pack<sup>3</sup> and shall contain not less than the minimum quantity specified in the following table:

<sup>2</sup> See also amendment 1, side-wall squares, p. 7.

<sup>3</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)

Size of shingles	Number bundles per square	Number of inches exposed to the weather—															
		4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½
1 square of 16 in. {Roofs..... 5/2 will cover on. {Sidewalls..	4 3	80 90	90 100			90 95	100 105	105 110									
1 square of 18 in. {Roofs..... 5/2¼ will cover on. {Sidewalls..	4 3	70 80	80 90	90 100		85 90	90 95	95 100	110 115								
1 square of 24 in. {Roofs..... 4.2 will cover on. {Sidewalls..	4 3					80 90	90 95	95 100		80 85	85 90	90 95	95 100	100 105	110 115		

\* 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".*—

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

\* Running inches in each course.

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.

### 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 9 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, which the standing committee accordingly approved.

When reprinting became necessary in 1935 the standing committee voted to reaffirm the standard without change.

### 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.  
 H. W. COLE, California Redwood Association.  
 J. F. WIGGINTON, Southern Cypress Manufacturers' Association.  
 H. E. GOSCH, Weatherbest Stained Shingle Co.  
 ARTHUR E. LANE, Arthur E. Lane Mill Service.  
 FINDLAY M. TORRENCE, Ohio Association of Retail Lumber Dealers.  
 NATIONAL RETAIL LUMBERMEN'S ASSOCIATION (representative to be named).  
 W. C. MILLER, Western Retail Lumbermen's Association.  
 JOSHUA H. VOGEL, M. A. I. A., Baker & Vogel.  
 R. M. CROSS, Twin City Lumber and Shingle Co.  
 D. M. O'BRIEN, National Stained Shingle Association, Inc.

### EFFECTIVE DATE

Commercial Standard CS31-33 became effective on September 15, 1933, and reaffirmation was announced May 15, 1935.



## LABELING

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



FIGURE 1.—Facsimile of label for each bundle of grade 1 shingles

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

*Amendment 1.*—SIDE-WALL SQUARES

The standing committee approved the following amendment to CS31-35, announced June 24, 1935, establishing 3 bundles of 16- and 18-inch random-width shingles as side-wall squares, with a coverage of 100 square feet when laid with the exposures indicated. It is recommended that these be plainly invoiced as "Side-wall squares" to avoid confusion with roof squares.

1. *The side-wall square of 16-inch random-width shingles* (to be laid 6½ inches to the weather) shall be 3 bundles, each packed in a 20-inch frame, 20 courses at each end, with openings between shingles averaging not more than 1½ inches to the course. When such shingles are packed otherwise than with 20 courses at each end, not less than 120 such courses shall be sold or delivered for each "side-wall square."

2. *The side-wall square of 18-inch random-width shingles* (to be laid 7½ inches to the weather) shall be 3 bundles, each packed in a 20-inch frame, 18 courses at each end, with openings between shingles averaging not more than 1½ inches to the course. When such shingles are packed otherwise than with 18 courses at each end, not less than 108 such courses shall be sold or delivered for each "side-wall square."



## 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,  
National Bureau of Standards,  
Washington, D. C.

## GENTLEMEN:

Having considered the statements on the reverse side of this sheet, we accept the Commercial Standard CS31-35 as our standard of practice in the

Production \*                      Distribution \*                      Use \*  
of wood shingles.

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 \_\_\_\_\_

\* 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 statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—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 U. S. 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, and are made effective through incorporation into sales contracts by means of labels, invoices and the like.

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 major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a nation-wide basis 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 on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—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

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 all their products to conform to the requirements of this standard.

### ASSOCIATIONS

American Forest Products Industries, Inc., Washington, D. C.  
 American Specification Institute, The, Chicago, Ill.  
 California Redwood Association, San Francisco, Calif.  
 California Retail Lumbermens Association, Garden Grove, Calif.  
 Central Missouri Association of Retail Lumber Dealers, Jefferson City, Mo.  
 Florida Lumber & Millwork Association, Orlando, Fla.  
 Illinois Lumber & Material Dealers Association, Springfield, Ill.  
 Inter-City Lumbermen's Club, South Bend, Ind.  
 Kentucky Retail Lumber Dealers Association, Louisville, Ky. (in principle).  
 Lumbermen's Association of Texas, Houston, Tex.  
 Lumbermen's Exchange of the City of Philadelphia, The, Philadelphia, Pa.  
 Michigan Retail Lumber Dealers Association, Lansing, Mich.  
 Mountain States Lumber Dealers Association, The, Denver, Colo.  
 National Association of Builders Exchanges, Washington, D. C.  
 National Lumber Manufacturers Association, Portland, Oreg. (in principle).  
 National Lumber Manufacturers Association, Washington, D. C.  
 Nebraska Lumber Merchants' Association, Lincoln, Nebr.  
 Northeastern Retail Lumbermens Association, Rochester, N. Y.  
 Northwestern Lumbermens Association, Minneapolis, Minn.  
 Ohio Association of Retail Lumber Dealers, Xenia, Ohio.  
 Red Cedar Shingle Bureau, Seattle, Wash.  
 Red Cedar Shingle Bureau (B. C. Div.), Vancouver, British Columbia.  
 Retail Lumber Dealers Association of Indiana, Crown Point, Ind.  
 Southern Cypress Manufacturers Association, Jacksonville, Fla.  
 Tennessee Lumber, Millwork & Supply Dealers Association, Nashville, Tenn. (in principle).

United Roofing Contractors Association, Chicago, Ill. (in principle).  
 Virginia Lumber & Building Supply Dealers Association, Richmond, Va. (in principle).  
 West Coast Lumbermen's Association, Seattle, Wash. (in principle).  
 Wisconsin Retail Lumbermens Association, Milwaukee, Wis.

### FIRMS

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

- Baldrige 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.  
 Beuttlcr & Arnold, Sioux City, Iowa.  
 (in principle.)  
 Bial, Geo. F., Hasbrouck Heights, N. J.  
 Big River Shingle Co., Clallam Bay, Wash.  
 Big Salkehatchie Cypress Co., The, Varnville, S. C.  
 Bishop, Horatio W., Los Angeles, Calif.  
 Blackburn, Robert, Milwaukee, Wis.  
 Blackstock Lumber Co., Seattle, Wash.  
 Blithe, Wesley Lesher, Philadelphia, Pa.  
 Bloedel Donovan Lumber Mills, Bel-  
 lingham, Wash.  
 Bogner, Harry, Milwaukee, Wis.  
 Botsford Lumber Co., Winona, Minn.  
 Brainerd, Harry B., New York, N. Y.  
 Brattle Bros. Mill Co., Ridgefield,  
 Wash.  
 Brattin & Son, F. J., Shepherd, Mich.  
 Brazelton Lumber Co., Waco, Tex.  
 Brazier, Clarence W., Chester, Pa.  
 Brew Manufacturing Co., Puyallup,  
 Wash.  
 Brewster & Son, Inc., Ridgefield Park,  
 N. J.  
 Brown, Percy J., Scotia, Calif.  
 Brown, W. J., Cedar Rapids, Iowa.  
 Brown Lumber Co., Inc., Dan, Ander-  
 son, S. C.  
 Buchanon & Smock Lumber Co.,  
 Asbury Park, N. J.  
 Buckingham, C. W., Oklahoma City,  
 Okla.  
 Buchner & Orth, St. Paul, Minn. (in  
 principle).  
 Burgess, N. P., Humboldt County,  
 Weott, Calif.  
 Burns Shingle Co., Seattle, Wash.  
 Burrard Shingle Co., North Vancouver,  
 British Columbia.  
 Burritt Co., The A. W., Bridgeport,  
 Conn.  
 Burrow Lumber Co., at Canyon, Hap-  
 py, Dalhart, Perryton, Tex., and  
 Beaver, Okla.  
 Bush & Miller, Vancouver, British Co-  
 lumbia.  
 C. B. Lumber & Shingle Co., Everett,  
 Wash.  
 Cabot, Inc., Samuel, Boston, Mass.  
 California Shingle Co., Santa Cruz,  
 Calif.  
 Cameron & Co., Inc., Wm., Waco,  
 Tex.  
 Campbell Lumber & Manufacturing  
 Co., The, Toledo, Ohio.  
 Canadian Western Lumber Co., Ltd.,  
 Fraser Mills, British Columbia.  
 Cannon & Fetzcr, Salt Lake City,  
 Utah.  
 Capilano Timber Co., Ltd., Vancouver,  
 British Columbia.  
 Carbon River Shingle Co., Fairfax,  
 Wash.  
 Carlisle Lumber Co., Onalaska, Wash.  
 Carlos Ruggles Lumber Co., Spring-  
 field, Mass.  
 Carlsborg Mill & Timber Co., Carls-  
 borg, Wash.  
 Carpenter-Wilson Co., Inc., Minneap-  
 olis, Minn.  
 Carr & Neff Lumber Co., Scottsbluff,  
 Nebr.  
 Carroll, John J., Ventnor, N. J.  
 Cates & Branson, Branscomb, Calif.  
 Central Warehouse Lumber Co., Min-  
 neapolis, Minn.  
 Century Lumber Co., Des Moines,  
 Iowa.  
 Champlin, R. A., Enid, Okla.  
 Chapin, Rollin C., Minneapolis, Minn.  
 Chapin Lumber Co., The, Aurora,  
 Colo.  
 Charlottesvillc Lumber Co., Inc., Char-  
 lottesville, Va.  
 Chattanooga Sash & Millwork Co.,  
 Chattanooga, Tenn.  
 Chelan Lumber Co., Chelan, Wash.  
 Chenault & Sons, A. L., Port Angeles,  
 Wash.  
 Chew Shingle Co., Ltd., Joseph, Van-  
 couver, 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, Spring-  
 field, Ohio  
 Clark & Wilson Lumber Co. of Dela-  
 ware, Linnton, Oreg.  
 Clay & Hill Lumber Co., Brookfield,  
 Mo.  
 Coast Cedar Shingle Co., Seattle,  
 Wash.  
 Cockfield, Brown & Co., Ltd., Van-  
 couver, British Columbia (in prin-  
 ciple).  
 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 & 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., Inc., Pomona, Calif.  
 Curtis Lumber Co., Seattle, Wash.  
 Dana, Royal, New York, N. Y.  
 Daniel, Jr., J. E., DeWitt, Ark.  
 Davenport, Peters Co., Boston, Mass.  
 DeJarnette, Charles W., Des Moines, Iowa.  
 Dekle Lumber Co., Jacksonville, Fla.  
 Dickerson Lumber Co., Huntington, W. Va.  
 Dix Lumber Co., North Cambridge, Mass.  
 Dodds Lumber Co., 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.  
 East Hoquiam Shingle Co., Hoquiam, Wash.  
 East Side Logging Co., Portland, Oreg.  
 Easterly Lumber Co., Chas., Carbon-dale, Ill.  
 Eastern Railway & Lumber Co., Cent-  
 aulia, Wash.  
 Eastwood Lumber Co., Inc., Albert S.,  
 Providence, R. I.  
 Eatonville Lumber Co., Eatonville,  
 Wash.  
 Eclipse Lumber Co., Clinton, Iowa.  
 Economy Lumber Co., Inc., Christians-  
 burg, Va.  
 Edwards & Sayward, Atlanta, Ga.  
 Elk River Mill & Lumber Co., Falk,  
 Humboldt County, Calif.  
 Elliott Lumber Co., Lodi, Calif.  
 Emery, H. G., Nyack, N. Y.  
 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, Pruynt & Co., Glens Falls, N. Y.  
 Florida Louisiana Red Cypress Co.,  
 Jacksonville, Fla.  
 Fluhrer Bros., Inc., Mayger, Oreg.  
 Foxworth-Galbraith Lumber Co., Am-  
 arillo, Tex.  
 Frey Planing Mill Co., The, Louisville,  
 Ky.  
 Friend & Terry Lumber Co., Sacra-  
 mento, 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, Ho-  
 quiam, Wash.  
 Green Bay Lumber Co., Maquoketa,  
 Iowa.  
 Green Lumber & Shingle Co., Quilcene,  
 Wash.  
 Grogan-Robinson Lumber Co., Great  
 Falls, Mont.  
 Guernsey-Westbrook Co., The, Hart-  
 ford, Conn.  
 Guerrier Lumber Co., Edison, Wash.  
 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., Fort 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.  
 Hawk Springs Lumber Co., Hawk  
 Springs, Wyo.  
 Hawkeye Lumber & Coal Co., Cedar  
 Rapids, Iowa.  
 Hawkeye Lumber Co., Oskaloosa,  
 Iowa.  
 Hawkins Cos., Inc., Boston, Mass.  
 Helfensteller, Hirsch & Watson, St.  
 Louis, Mo.  
 Heyer Sons, W. H., Sumner, Iowa.  
 Highland Lumber Mills, Wrights, Calif.  
 Hinekley & 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., Vancou-  
 ver, British Columbia.  
 Home Lumber & Coal Co., Dixon, Ill.



- Home Lumber Co., West Bend, Wis.  
 Hubbard & Carmichael Bros. Inc., San Jose, Calif.  
 Humboldt Milling Co., Fortuna, Calif.  
 Hunter, Jr., T. H., 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.  
 Independent Lumber Co., The, Grand Junction, Colo.  
 Ingram, Inc., W. F., Kalama, Wash.  
 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.  
 Kansas City Fire Department, Kansas City, Kans.  
 Kelley-Maverick Co., San Antonio, Tex.  
 Kelly, V. S., Bellingham, Wash.  
 Kerriston Shingle Co., Kerriston, Wash.  
 Keystone Shingles & Lumber, Ltd., New Westminster, British Columbia.  
 Kimberlin, C. W., Owensboro, Ky.  
 Kirkpatrick Estate, Thomas, 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 Bros., Inc., Joliet, Ill.  
 Leachman Lumber Co., Des Moines, Iowa.  
 Lewis Shingle Co., Inc., J. A., Wheeler, Oreg.  
 Leybold-Smith Shingle Co., Inc., Tacoma, Wash.  
 Lingo Lumber Co., Dallas, Tex.  
 Long-Bell Lumber Sales Corporation, Longview, Wash.  
 Lovatt, George S., Philadelphia, Pa.  
 Lovell-Scholfield Lumber Co., Eldora, Iowa.  
 Lowell-Whipple Co., The, Worcester, Mass.  
 Lumber & Millwork Co. of Philadelphia, The, Philadelphia, Pa.  
 Lyman-Hawkins Lumber Co., The, Akron, Ohio.  
 Lyon-Gray Lumber Co., Dallas, Tex.  
 Lyons Co., R. W., Hindsboro, Ill.  
 Mack, Herman L., Trenton, N. J.  
 Mackie & Barnes, Inc., Seattle, Wash.  
 Mackie Mill Co., Markham, Wash.  
 Madison Lumber and Mill Co., Lewiston, Idaho.  
 Magney & Tusler, Inc., Minneapolis, Minn.  
 Maisler Bros. Lumber Co., Fresno, Calif.  
 Manasse, DeWitt J., Highland Park, Ill. (in principle).  
 Mann & Co., 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 Lumber Co., The C. A., Toledo, Ohio.  
 Mauk Seattle Lumber Co., Seattle, Wash.  
 Mauran 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.  
 Miles Lumber and Coal Co., A. W., Livingston, Mont.



- Miller Cedar Lumber Co., E. C., Aberdeen, Wash.  
 Miller & Sons, W. H., Madison, Ind.  
 Miller & Yeager, Terre Haute, Ind.  
 Milligan Co., D., Jefferson, Iowa.  
 Milwaukie Lumber & Shingle Co., Milwaukie, Oreg.  
 Mitchell & Co., M. F., Carlotta, Humboldt County, Calif.  
 Montana State College, Bozeman, Mont. (in principle).  
 Monterey Bay Redwood Co., Santa Cruz, Calif.  
 Montgomery & Patteson, 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.  
 Navarro Shingle Co., Philo, Calif.  
 Nebraska, University of, Lincoln, Nebr.  
 Nellson, W. F., Dallas, Tex.  
 Nettleton Lumber Co., Seattle, Wash.  
 Newbegin Lumber Co., James G., Tacoma, Wash.  
 New Rochelle Coal & Lumber Co., New Rochelle, N. Y.  
 New York State Department of Public Works, Albany, N. Y.  
 North Hudson Manufacturing Co., North Bergen, N. J.  
 North Western Lumber Co., Hoquiam, Wash.  
 Northern Lumber Co., Estherville, Iowa.  
 Olympia Shingle Co., Olympia, Wash.  
 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.  
 Perma-Stain Co., Cleveland, Ohio.  
 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.  
 Prosperity Shingle Mill, Arlington, Wash.  
 Putnam & Jones, Carthage, Mo.  
 Quality Shingle Co., Edmonds, Wash.  
 Rasmussen, E. P., Smith River, Del Norte County, Calif.  
 Reading Lumber Co., Inc., Reading, Pa.  
 Red Cedar Roofing Co., Ltd., Vancouver, British, Columbia.  
 Reed & Corlett, Oakland, Calif.  
 Reed Mill Co., Shelton, Wash.  
 Reid, H. L., Glenwood, Calif.  
 Reid Jr., William H., 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, Oreg.  
 Rothschild, LeRoy B., Philadelphia, Pa.  
 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.  
 Scamell, Ralph E., Topeka, Kans.  
 Schoeneman Bros. Co., Hawarden, 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 Lumber & Shingle Co., M. R., Seattle, Wis.
- Smith & Sons, J. E., Philadelphia, Pa.
- Snider Shingle Co., Carlton, Oreg.
- 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.
- Standard Stained Shingle Co., Detroit, Mich.
- Stanton Lumber Co., Stanton, Calif.
- Star Lumber Co., The, Liberal, Kans.
- Starks Stained Shingle Co., Seattle, Wash.
- 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.
- Twin City Lumber & Shingle Co., St. Paul, Minn.
- Union Avenue Shingle Co., Portland, Oreg.
- Union Lumber Co., San Francisco, Calif.
- United Mills, Ltd., New Westminster, British Columbia.
- Uddike-Kennedy Co., Inc., Trenton, N. J.
- Van Pelt, John V., Patchogue, N. Y. (in principle).
- Van Winkle Bromley Lumber Co., The, Paterson, N. J.
- Vanderhoof-Libby, Inc., Seattle, Wash.
- Varner Bros. Lumber Co., Dallas, Tex.
- Velde Lumber Co., Pekin, Ill.
- Verhey Lumber Co., Grand Rapids, Mich.
- Vickere Lumber Co., T. W., Sheridan, Wyo.
- Virginia Polytechnic Institute, Blacksburg, Va. (in principle).
- 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 & Rating Bureau, Seattle, Wash. (in principle).
- Weatherbest Stained Shingle Co., Inc., North Tonawanda, N. Y.
- Weinel Lumber Co., August F., Columbia, Ill.
- West Coast Lumber Co., Sarasota, Fla.
- West Coast Lumberman, Seattle, Wash. (in principle).
- 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.
- Westained Corporation, Seattle, Wash.
- Westernman Lumber Co., H. E., Montgomery, Minn.
- Western Cedar Shingle Co., Anacortes, Wash.
- Western Lumber Co., San Diego, Calif.
- Weyerhaeuser Sales Co., St. Paul, Minn.
- Weyerhaeuser Timber Co., Everett, Wash.
- Weyerhaeuser Timber Co., Tacoma, Wash.
- Whateom 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 (Dunn's Mill), Carlotta, Calif.
- Williamson & Co., Thos. W., 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.  
 Wolverine Shingle & Lumber Co., Detroit, Mich.  
 Wood Construction Publishing Co., Xenia, Ohio (in principle).  
 Wood & Iverson Inc., Hobart, Wash. (in principle).  
 Wood Lumber Co., Birmingham, Ala.  
 Wood Lumber Co., E. K., Oakland, Calif.  
 Wood & Son, E. J., Clarksburg, W. Va.  
 Woodbridge Lumber Co., Woodbridge, N. J.

Woodlawn Mill Co., Hoquiam, Wash.  
 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	Item
0-30.	The commercial standards service and its value to business.
1-32.	Clinical thermometers (second edition).
2-30.	Mopsticks.
3-28.	Stoddard solvent.
4-29.	Staple porcelain (all-clay) plumbing fixtures.
5-29.	Steel pipe nipples.
6-31.	Wrought-iron pipe nipples (second edition).
7-29.	Standard weight malleable iron or steel screwed unions.
8-33.	Gage blanks (second edition).
9-33.	Builders' template hardware (second edition)
10-29.	Brass pipe nipples.
11-29.	Regain of mercerized cotton yarns.
12-35.	Fuel oils (third edition).
13-30.	Dress patterns.
14-31.	Boys' blouses, button-on waists, shirts, and junior shirts.
15-29.	Men's pajamas.
16-29.	Wall paper.
17-32.	Diamond core drill fittings (second edition).
18-29.	Hickory golf shafts.
19-32.	Foundry patterns of wood (second edition).
20-30.	Staple vitreous china plumbing fixtures.
21-34.	Interchangeable ground-glass joints, stop-cocks and stoppers (second edition).
22-30.	Builders' hardware (nontemplate).
23-30.	Feldspar.
24-30.	Standard screw threads.
25-30.	Special screw threads.
26-30.	Aromatic red-cedar closet lining.
27-30.	Plate-glass mirrors.
28-32.	Cotton-fabric tents, tarpaulins, and covers.
29-31.	Staple seats for water-closet bowls.

CS	Item
30-31.	Colors for sanitary ware.
31-35.	Wood shingles (third edition).
32-31.	Cotton cloth for rubber and pyroxylin coating.
33-32.	Knit underwear (exclusive of rayon).
34-31.	Bag, case, and strap leather.
35-31.	Plywood.
36-33.	Fourdrinier wire cloth (second edition).
37-31.	Steel bone plates and screws.
38-32.	Hospital rubber sheeting.
39-32.	Wool and part-wool blankets.
40-32.	Surgeons' rubber gloves.
41-32.	Surgeons' latex gloves.
42-35.	Fiber insulating board (second edition).
43-32.	Grading of sulphonated oils.
44-32.	Apple wraps.
45-33.	Douglas fir plywood.
46-33.	Hosiery lengths.
47-34.	Marking of gold-filled and rolled-gold-plate articles other than watch cases.
48-34.	Domestic burners for Pennsylvania anthracite (underfeed type).
49-34.	Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.
50-34.	Binders board for bookbinding and other purposes.
51-35.	Marking of articles made of silver in combination with gold.
52-35.	100 percent mohair plain velvet, 100 percent mohair plain frieze, and 50 percent mohair plain frieze.
53-35.	Asphalt and mastic tile.

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

