

Treads and Risers,  
Stair; Hardwood

U. S. DEPARTMENT OF COMMERCE

Jesse H. Jones, Secretary

NATIONAL BUREAU OF STANDARDS

LYMAN J. BRIGGS, Director

**HARDWOOD STAIR TREADS  
AND RISERS**

Bureau of Standards

NOV 30 1940

COMMERCIAL STANDARD CS89-40

Effective Date for New Production, from October 10, 1940



**A RECORDED VOLUNTARY  
STANDARD OF THE TRADE**

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1940

PROMULGATION  
of  
COMMERCIAL STANDARD CS89-40  
for  
HARDWOOD STAIR TREADS AND RISERS

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On December 20, 1939, at the instance of interested manufacturers, a preliminary conference was held at which a proposed commercial standard for hardwood stair treads and risers was adopted. The proposed standard was then submitted to a number of manufacturers, and to distributor and consumer organizations for comment, and later the adjusted draft was circulated to those directly concerned for written acceptance. The trade has since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the standard as shown herein.

The standard is effective for new production from October 10, 1940.

Promulgation recommended.

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

Promulgated.

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

Promulgation.

Jesse H. Jones,  
*Secretary of Commerce.*

# HARDWOOD STAIR TREADS AND RISERS

## COMMERCIAL STANDARD CS89-40

### PURPOSE

1. The purpose of this standard for hardwood stair treads and risers is (a) to provide a common basis for the manufacture, distribution, and use of this material; (b) to facilitate the procurement of standard sizes, grades, and patterns; (c) to bring about a better understanding between buyers and sellers; and (d) to effectuate economies through the use of standard treads and risers.

### SCOPE

2. This standard provides minimum specifications for hardwood stair treads and risers. It covers three grades of treads in three widths and four grades of risers in four widths which are available in five standard lengths. It also covers species, approved tread nosing pattern, nomenclature and definitions, and a method of certification of compliance with the standard.

### GENERAL REQUIREMENTS

3. All hardwood stair treads and risers sold as conforming to commercial standard grades shall be well manufactured in accordance with the following requirements:

4. *Seasoning*.—All hardwoods used in the manufacture of stair treads and risers shall be properly kiln-dried according to accepted methods for the species in question, to a proper and uniform moisture content.

5. *Workmanship*.—All stair treads and risers shall be of uniform thickness and manufactured in accordance with good mill practice. The face side of all treads and risers shall be smoothly sanded, unless otherwise specified.

### DETAIL REQUIREMENTS

6. *Grading*.—Hardwood stair treads and risers shall be graded according to the face, side, and nosing. The reverse side of all grades may contain imperfections and characteristics which do not materially impair the strength.

### STANDARD GRADES

7. The standard grades for hardwood treads and risers, which may be glued-up for width or one piece, shall be as follows:

8. *Clear Grade*.—The tread nosing and the face of treads and risers shall be clear and free of sapwood, except as noted in paragraph 12.

In glued-up stock, the pieces shall be well matched for color and grain. Streaks may be admitted, but not more than two in any one tread or riser and not over 6 inches long in the aggregate.

9. *Select Grade.*—The tread nosing and the face of treads and risers may contain slightly chipped grain; streaks; bright sapwood, except as noted in paragraph 12; sound tight knots not over  $\frac{1}{4}$  inch in diameter and not more than two in each piece; spot-worm holes  $\frac{1}{16}$ -inch in diameter or less, to the extent of one per lineal foot.

10. *Character-Marked Grade.*—The tread nosing and the face of treads and risers shall display various character markings inherent in the tree, reflecting the natural beauty of hardwood. The character markings may include tight knots, worm holes, bird pecks, swirls, burls, and other grain irregularities; stain, streaks and other color variations occurring in the growth of the wood. It shall be free from rot, decay, and heart center.

11. *Paint Grade.*—This grade covers risers only which are intended for a paint finish. The face may contain tight knots, stain, or other sound imperfections which do not materially impair the strength or which would prevent a smooth paint finish. Open defects when properly filled and sanded shall be admitted.

12. While oak is the predominant species, stair treads and risers are also made from the following hardwoods, which shall be graded according to the standard grading requirements as covered by paragraphs 8, 9, 10, and 11, unless an exception is noted below.

Ash—Standard, except sapwood is permitted in Clear Grade.

Beech—Standard, no exception.

Birch, unselected—Standard, except sapwood is permitted in Clear Grade.

Birch, selected, red—Standard, except no sapwood permitted in Select Grade and Character-Marked Grade.

Cherry—Standard, except no sapwood permitted in Select Grade and Character-Marked Grade.

Chestnut—Standard, no exception.

Gum, black—Standard, except sapwood is permitted in Clear Grade.

Gum, red—Standard, except no sapwood permitted in Select Grade and Character-Marked Grade.

Gum, sap—Standard, except sapwood is permitted in Clear Grade.

Hickory—Standard, except sapwood is permitted in Clear Grade.

Magnolia—Standard, except sapwood is permitted in Clear Grade.

Mahogany—Standard, no exception.

Maple—Standard, except sapwood is permitted in Clear Grade.

Oak—Standard, except sapwood is permitted in Clear Grade.

Pecan—Standard, except sapwood is permitted in Clear Grade.

Poplar, yellow—Standard, except sapwood is permitted in Clear Grade.

Sycamore—Standard, except sapwood is permitted in Clear Grade.

Tupelo—Standard, except sapwood is permitted in Clear Grade.

Walnut, steamed—Standard, except sapwood is permitted in Clear Grade.

Walnut, unsteamed—Standard, except no sapwood permitted in Select Grade and Character-Marked Grade.

## TREADS

13. Stair treads are available in Clear Grade, Select Grade, and Character-Marked Grade. (See paragraphs 8, 9, and 10.)

14. *Thickness.*—The standard thickness for treads shall be  $1\frac{1}{16}$  inches after molding, less customary allowance for sanding. Special thicknesses of  $\frac{3}{32}$  inch and  $1\frac{1}{16}$  inches may also be graded according to this standard.

15. *Width.*—The standard widths for treads shall be  $9\frac{1}{2}$  inches,  $10\frac{1}{2}$  inches, and  $11\frac{1}{2}$  inches. The width shall be measured from the extreme point of the nosing to the back edge.



16. *Length.*—The standard lengths for treads shall be 3 feet, 3 feet 6 inches, 4 feet, 4 feet 6 inches, and 5 feet.

17. *Nosing pattern.*—Nosing shall be round, as shown in figure 1.

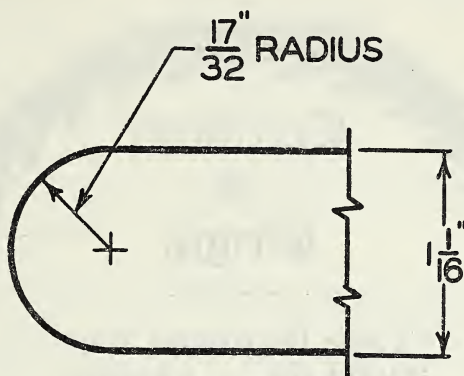


FIGURE 1.—Round nosing.

#### RISERS

18. Stair risers are available in Clear Grade, Select Grade, Character-Marked Grade, and Paint Grade. (See paragraphs 8, 9, 10, and 11.)

19. *Thickness.*—The standard thickness of risers shall be  $\frac{3}{4}$  inch after molding, less customary allowance for sanding.

20. *Width.*—The standard widths of risers shall be  $6\frac{1}{2}$  inches, 7 inches,  $7\frac{1}{2}$  inches, and 8 inches.

21. *Length.*—The standard lengths of risers shall be 3 feet, 3 feet 6 inches, 4 feet, 4 feet 6 inches, and 5 feet.

#### TOLERANCE

22. A manufacturing tolerance of plus or minus  $\frac{1}{32}$  inch in the thickness, width, and length shall be allowed. All treads and risers shall be furnished with square ends and with side edges parallel.

#### INSPECTION

23. All hardwood stair treads and risers sold as conforming to the commercial standard are subject to inspection in the condition as received, and complaints regarding any shipment shall be made within five (5) days after receipt thereof. Any rejected material shall be held intact in its original form, properly protected, for a period up to three (3) weeks after notice of rejection and pending adjustments.

#### CERTIFICATION

24. In order to assure the purchaser that he is receiving hardwood stair treads and risers of the quality specified, producers may individually or in concert with their trade association, grade and trademark each piece or package as conforming to the established standard.

The Hardwood Dimension Manufacturers Association, in concert with producer members, plans to issue a certificate of grade as shown in figure 2, with invoices or with each package.



FIGURE 2.—Facsimile of certificate of the Hardwood Dimension Manufacturers Association.

[NOTE.—According to the sponsor, the name of the manufacturer of the product will be shown on the back of the certificate or by a serial number recorded with the Hardwood Dimension Manufacturers Association, Louisville, Ky.]

## NOMENCLATURE AND DEFINITIONS

*Bird peck.*—A small hole or patch of distorted grain resulting from birds pecking through the growing cells of the tree.

*Burl.*—A swirl or twist in the grain of the wood which occurs near a knot but does not contain a knot over  $\frac{1}{8}$  inch in diameter.

*Characteristics.*—Any natural marking or injury which occurs in wood altering the uniformity of its appearance, such as knots, stain, and worm holes.

*Chipped grain.*—An area where the surface is chipped or broken out in very short particles below the line of cut.

*Decay.*—A disintegration of the wood substance due to the action of wood destroying fungi. Also known as “dote” and “rot.”

*Hardwoods.*—The botanical group of trees that with a few exceptions, comprise all broadleaved species. The term has no reference to the actual hardness of the wood.

*Heart-center.*—The small soft core (pith) occurring in the structural center of the log.

*Kiln dried.*—Dried by artificial heat to a moisture content which is less than can normally be obtained through the natural process known as air seasoning.

*Knot.*—A branch or limb, embedded in the tree, which has been cut through in the process of manufacture.

*Sound knot.*—A knot which is solid across its face, as hard as the surrounding wood, and shows no indication of decay.

*Tight knot.*—A knot which is so fixed by growth or position as to firmly retain its place in the piece.

*Moisture content of wood.*—Weight of the water contained in the wood expressed in percentage of the weight of the oven-dry wood.

*Sapwood.*—The layers of wood next to the bark, usually lighter in color than the heartwood.

*Spots.*—See *Streak*.

*Stain.*—A discoloration, occurring on or in wood, of any color other than the natural color of the piece on which it appears.

*Streak.*—A discoloration caused by an accumulation of gum-like substance or chemical change, as a small patch or streak, within the wood.

*Swirl.*—See *Burl*.

*Worm holes.*—Voids in the wood caused by the burrowing action of certain wood-infesting worms.

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## EFFECTIVE DATE

The standard is effective for new production from October 10, 1940.

## STANDING COMMITTEE

The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Each organization nominated its own representatives. Comment concerning the standard and suggestions for revision, may be addressed to any member of the committee or to the Division of Trade Standards, National Bureau of Standards, which acts as secretary for the committee.

### *Manufacturers:*

LOUIS J. BOSSE (chairman), Hardwood Dimension Manufacturers Association, Heyburn Bldg., Louisville, Ky.

F. J. HAAS, M. B. Farrin Lumber Co., Cincinnati, Ohio.

MAX HADEN, E. L. Bruce Co., Memphis, Tenn.

H. H. HAYNES, Long-Bell Lumber Co., DeRidder, La.

W. T. MULLICAN, McMinnville Manufacturing Co., McMinnville, Tenn.

### *Distributors:*

C. K. PAINE, Curtis Companies Incorporated, 114 Twelfth Avenue South, Clinton, Iowa. Representing National Association of Woodwork Jobbers, Inc.

DWIGHT HINCKLEY, Dwight Hineckley Lumber Co., Cincinnati, Ohio. Representing National-American Wholesale Lumber Association.

### *Users:*

EARL W. MACY, Technical Division, Federal Housing Administration, Washington, D. C.

L. S. CLARK, Twin City Hardwood Lumber Co., 509 N. Cleveland Ave., St. Paul, Minn. Representing National Association of Purchasing Agents.

**HISTORY OF PROJECT**

On September 25, 1939, the Hardwood Dimension Manufacturers Association requested the cooperation of the National Bureau of Standards in the establishment of a commercial standard for hardwood stair treads and risers. A draft was considered at a Manufacturers' Conference held in Louisville, Ky., on December 20, 1939, and constructive changes were made. It was then submitted to producers, and to distributor and consumer organizations, for review and comment. After the requirements were harmonized and adjusted so that the draft represented the composite views of all interested groups, the recommended commercial standard was circulated on May 15, 1940 to all those directly concerned for written acceptance.

Upon receipt of official acceptance, estimated to represent a satisfactory majority of the production volume, and in the absence of active, valid opposition, the standard was promulgated as Commercial Standard CS89-40, effective for new production from October 10, 1940.



## ACCEPTANCE OF COMMERCIAL STANDARD

If acceptance has not previously been filed, 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 CS89-40 as our standard of practice in the

Production <sup>1</sup>                      Distribution <sup>1</sup>                      Use <sup>1</sup>

of hardwood stair treads and risers.

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 of individual officer.....  
(in ink)

(Kindly typewrite or print the following lines)

Name and title of above officer .....

Organization .....

(Fill in exactly as it should be listed)

Street address .....

City and State .....

<sup>1</sup> Please designate which group you represent by drawing lines through the other two. Please file separate acceptances for all subsidiary companies and affiliates which should be listed separately as acceptors. 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 those concerned. 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 United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups 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 interested parties 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 a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

## ACCEPTORS

The organizations and individuals listed below have accepted these grading rules as their standard of practice in the production, distribution and use of hardwood stair treads and risers. Such endorsement does not signify that they may not find it necessary to deviate from the standard, nor that producers so listed guarantee all of their products in this field to conform with the requirements of this standard. Therefore specific evidence of conformity should be obtained where required.

## ASSOCIATIONS

American Specification Institute, Chicago, Ill.  
 American Walnut Manufacturers Association, Chicago, Ill.  
 Appalachian Hardwood Manufacturers, Inc., Cincinnati, Ohio.  
 Arizona Retail Lumber & Builders Supply Association, Phoenix, Ariz.  
 Associated General Contractors of America, Inc., Washington, D. C.  
 Building Officials Conference of America, Inc., Washington, D. C.  
 Carolina Lumber & Building Supply Association, Charlotte, N. C. (In principle.)  
 Central Ohio Lumber Institute, Columbus, Ohio.  
 Douglas Fir Plywood Association, Tacoma, Wash. (In principle.)  
 Hardwood Dimension Manufacturers Association, Inc., Louisville, Ky.  
 Michigan Retail Lumber Dealers Association, Lansing, Mich.  
 Mississippi Retail Lumber Dealers Association, Inc., Jackson, Miss.  
 National Association of Purchasing Agents, New York, N. Y.  
 National Council of Women of the U. S., Inc., New York, N. Y.  
 National Hardwood Lumber Association, Chicago, Ill.  
 National Oak Flooring Manufacturers Association, Memphis, Tenn.  
 New York Lumber Trade Association, Inc., New York, N. Y.  
 North West Woodwork Association, St. Paul, Minn. (In principle.)  
 Northeastern Lumber Manufacturers Association, Inc., New York, N. Y. (In principle.)  
 Northeastern Retail Lumbermens Association, Rochester, N. Y.  
 Northern Hemlock & Hardwood Manufacturers Association, Oshkosh, Wis.  
 Ohio Association of Retail Lumber Dealers, The, Xenia, Ohio.  
 Southern Hardwood Producers, Inc., Memphis, Tenn. (In principle.)  
 Virginia Building Material Association, Richmond, Va.

West Coast Lumbermen's Association, Seattle, Wash. (In principle.)  
 Wisconsin Retail Lumbermens Association, Milwaukee, Wis.

## FIRMS

Adams, Franklin O., Tampa, Fla.  
 Adams-Edgar Lumber Co., Morton, Miss.  
 Allan Lumber Co., Inc., Greencastle, Ind.  
 Allison & Allison, Los Angeles, Calif.  
 Allspine Corporation, McGeheysville, Va.  
 Altfillisch, Charles, Decorah, Iowa.  
 Alto Mill & Lumber Co., Texarkana, Tex.  
 American Houses, Inc., New York, N. Y.  
 Anderson-Tully Co., Memphis, Tenn.  
 Andrews Lumber Co., C. E., New Bethlehem, Pa.  
 Angelina Hardwood Co., Keltys, Tex.  
 Atlanta Oak Flooring Co., Atlanta, Ga.  
 Augusta Lumber Co., Augusta, Maine.  
 Auler-Jensen & Brown, Oshkosh, Wis.  
 Austin & Austin, Burlington, Vt. (In principle.)  
 Austin & Shambleau, South Bend, Ind.  
 Ayres, Atlee B. & Robert M., San Antonio, Tex.  
 Baer & Son, B. C., Reading, Pa.  
 Balch & Lippert, Madison, Wis.  
 Barnaby & Chas. H., Greencastle, Ind.  
 Barthmaier, Eugene V., Philadelphia, Pa.  
 Baumer, Herbert, Columbus, Ohio.  
 Baxter & Co., C. B., Kansas City, Mo.  
 Beach Lumber Co., Denver, Colo.  
 Beacham & LeGrand, Greenville, S. C.  
 Beardsley, Wallace P., Auburn, N. Y.  
 Bedna Young Lumber Co., Jackson, Tenn.  
 Bennett Bailey Lumber Co., Minneapolis, Minn.  
 Betcher, George F., Denver, Colo.  
 Beuttler & Arnold, Sioux City, Iowa.  
 Bial, George F., Hasbrouck Heights, N. J.  
 Bickford, Robert Turner, Elmira, N. Y.



- Big Jo Lumber Co., The, Santa Fe, N. Mex.
- Bishop, Horatio W., Los Angeles, Calif.
- Blackstock Lumber Co., Seattle, Wash.
- Blithe, Wesley Leshner, Philadelphia, Pa.
- Boehm, George A., New York, N. Y.
- Bogner, Harry, Milwaukee, Wis.
- Boller & Sons Co., Chas., Buffalo, N. Y.
- Borland Lumber Co., Oil City, Pa.
- Bovard, William R., Kansas City, Mo.
- Bowler Lumber Co., Bowler, Wis.
- Bradley Lumber Co. of Arkansas, Warren, Ark.
- Bradley Lumber Sales Co., Detroit, Mich.
- Brainerd, Harry B., New York, N. Y. (In principle.)
- Braseth & Houkom, Fargo, N. Dak.
- Brazer, Clarence W., New York, N. Y.
- Briggs Co., L. W., Worcester, Mass.
- Briggs Lumber & Manufacturing Co., Chas. A., Scottsdale, Pa.
- Bristol Door & Lumber Co., Bristol, Va.
- Brown, Floyd W., Minneapolis, Minn.
- Brown, Presley E., Wilkesboro, N. C.
- Brown, W. J., Cedar Rapids, Iowa.
- Brown-Borhek Co., Bethlehem, Pa.
- Brown Dimension Co., Manistique, Mich.
- Bruce Co., E. L., Memphis, Tenn.
- Brust & Brust, Milwaukee, Wis.
- Buchanon & Smock Lumber Co., Asbury Park, N. J.
- Buechner & Orth, St. Paul, Minn. (In principle.)
- Building Service, Inc., Great Falls, Mont.
- Bullock, Inc., E. S., Williamsport, Pa.
- Burritt Co., The A. W., Bridgeport, Conn.
- Byron Sash & Door Co., Inc., Louisville, Ky.
- Cameron Lumber Co., Inc., Newburgh N. Y.
- Candela, Rosario, New York, N. Y.
- Cannon Mills, Kannapolis, N. C.
- Cannon & Mullen, Salt Lake City, Utah.
- Carr, Adams & Collier Co., Dubuque, Iowa.
- Chapin Lumber Co., The, Aurora, Colo.
- Chapman & Dewey Lumber Co., Memphis, Tenn.
- Charlottesville Lumber Co., Inc., Charlottesville, Va.
- Chase Lumber Co., S. H., San Jose, Calif.
- Chattanooga Sash & Millwork Co., Chattanooga, Tenn.
- Cherokee Flooring Corporation, Burlington, N. C.
- Cherry River Boom & Lumber Co. Philadelphia, Pa.
- Child, Harry Charles, Sayre, Pa.
- Christmann Veneer & Lumber Co., St. Louis, Mo.
- Clark, Carl W., Cortland, N. Y.
- Coffman Stair Co., Washington C. H., Ohio.
- Coit, E., New York, N. Y.
- Collier-Adams Manufacturing Co., St. Joseph, Mo.
- Collier-Barnett Co., The, Toledo, Ohio.
- Combs Lumber Co., Lexington, Ky.
- Connor Lumber & Land Co., The, Marshfield, Wis.
- Conrad & Cummings, Binghamton, N. Y.
- Conrow, H. S., Wichita, Kans. (In principle.)
- Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass.
- Cooper, W. E., Los Angeles, Calif.
- Cotton & Hanlon, Odessa, N. Y.
- Cram & Ferguson, Boston, Mass.
- Crossett Lumber Co., Crossett, Ark.
- Crowell & Lancaster, Bangor, Maine.
- Currier Lumber Co., Detroit, Mich.
- Cuthbert & Cuthbert, Ann Arbor, Mich.
- Daniel, J. E., Jr., Malvern, Ark.
- Davis Hardwood Co., San Francisco, Calif.
- De Jarnette, Charles W., Des Moines, Iowa.
- De Longchamps & O'Brien, Reno, Nev.
- Delahanty, Andrew L., Albany, N. Y.
- Denkmann Lumber Co., Canton, Miss.
- Derr Co., Wm. H., Philadelphia, Pa.
- DeSoto Hardwood Flooring Co., Memphis, Tenn.
- di Cristina & Son, J., San Francisco, Calif.
- Dierks Lumber & Coal Co., Kansas City, Mo.
- Dietel, George J., Buffalo, N. Y.
- District of Columbia, Washington, D. C.
- Dodge & Morrison, New York, N. Y.
- Donovan, John J., Berkeley, Calif.
- Duquesne Lumber Co., Inc., Pittsburgh Pa.
- Dwight Lumber Co., Detroit, Mich.
- Eastman-Gardiner Hardwood Co., Laurel, Miss.
- Eldridge, Charles Wm., Oswego, N. Y.
- Emery Industries, Inc., Cincinnati, Ohio.
- Emory River Lumber Co., Lansing, Tenn.
- Engler Millwork Corporation, Jersey City, N. J.
- English, Harold T., Hutchinson, Kans.
- Estes Lumber Co., Birmingham, Ala.
- Eureka Sash, Door & Moulding Mills, San Francisco, Calif.
- Everett & Associates, H. F., Allentown, Pa.
- Exchange Lumber & Manufacturing Co., Spokane, Wash.
- Farr, Albert, & J. Francis Ward, San Francisco, Calif.
- Farrin Lumber Co., The M. B., Cincinnati, Ohio.
- Ferguson Lumber Co., W. T., St. Louis, Mo.



- Fitz-Gibbon, T. David, Norfolk, Va.  
 Flannagan, Eric G., Henderson, N. C.  
 Foley Lumber Co., T. A., Paris, Ill.  
 Foltz & Son, Herbert, Indianapolis, Ind.  
 Fordyce-Crossett Sales Co., Crossett, Ark.  
 Forrest Lumber Co., Lamesa, Tex., and other cities.  
 Forsblom & Parks, Wichita, Kans.  
 Forsyth Hardwood Co., San Francisco Calif.  
 Foster Lumber Co., R. S., Indianapolis, Ind.  
 Frantz & Spence, Saginaw, Mich.  
 Fraser Lumber & Manufacturing Co., Appleton, Wis.  
 Freiberg Mahogany Co., The, Cincinnati, Ohio.  
 Frost Lumber Industries, Inc., Shreveport, La.  
 Gaertner, Otto, New York, N. Y.  
 Gaines, Henry Irvén, Asheville, N. C.  
 Gall, Harry L. C., New York, N. Y.  
 Gamble Bros., Inc., Louisville, Ky.  
 General Millwork Corporation, Utica, N. Y.  
 Griffith Lumber Co., Inc., Huntington, W. Va.  
 Hagemeyer Lumber Co., Cincinnati, Ohio.  
 Hahn, Stanley W., Silver Spring, Md.  
 Hallberg & Beersman, Chicago, Ill.  
 Hannaford & Sons, Samuel, Cincinnati, Ohio.  
 Harper & West, Boston, Mass.  
 Harris Manufacturing Co., Johnson City, Tenn.  
 Hasness, Carlisle D., Harrisburg, Pa.  
 Hawkins Lumber & Warehouse Co., Boston, Mass.  
 Haxby & Bissell, Minneapolis, Minn.  
 Heidritter Lumber Corporation, Elizabeth, N. J.  
 Helfensteller, Hirsh & Watson, St. Louis, Mo.  
 Henderson-Molpus Co., Philadelphia, Miss.  
 Herbst & Kuenzli, Milwaukee, Wis.  
 Higgins, Charles H., New York, N. Y.  
 Higgins Lumber Co., J. E., San Francisco, Calif.  
 Hillyer Deutsch Edwards, Inc., Oakdale, La.  
 Hilty-Forster Lumber Co., Milwaukee, Wis.  
 Hinckley Lumber Co., Dwight, Cincinnati, Ohio.  
 Hines Lumber Co., Edward, Park Falls, Wis.  
 Hixon-Peterson Lumber Co., Toledo, Ohio.  
 Hogan Lumber Co., Oakland, Calif.  
 Hope, Frank L., San Diego, Calif.  
 Hopkins, Albert Hart, Buffalo, N. Y.  
 Houston, Better Business Bureau of, Houston, Tex. (In principle.)  
 Hudson Lumber, Inc., Akron, Ohio.  
 Hunter Lumber Co., Chillicothe, Ill.  
 Hunting Lumber Co., R. D., Cedar Rapids, Iowa.  
 Hurd Lumber Co., Detroit, Mich.  
 Hutton & Bourbonnais Co., Hickory, N. C.  
 Illinois, University of, Urbana, Ill. (In principle.)  
 Jefferson Wood Products Co., Jefferson, Wis.  
 Johnson, Keplar B., Seattle, Wash.  
 Johnson, Wallwork & Dukehart, Portland, Ore.  
 Jones Hardwood Co., San Francisco, Calif.  
 Keene & Simpson, Kansas City, Mo.  
 Keich, Robert J., Warren, Ohio.  
 Kendrick & Brown Co., Glens Falls, N. Y.  
 Kenwood Corporation, Dailey, W. Va., and Louisville, Ky.  
 Kilpatrick Bros., Inc., Oklahoma City, Okla.  
 Kimball & Wilson, Inc., Detroit, Mich.  
 Kirby Lumber Corporation, Houston, Tex.  
 Kirchoff & Rose, The Office of, Milwaukee, Wis.  
 Klipstine Lumber & Supply Co., Sidney, Ohio.  
 Knighton & Howell, Portland, Ore.  
 Kohn, Robert D., & Chas. Butler, New York, N. Y.  
 Kruckemeyer & Strong, Cincinnati, Ohio.  
 Kyle, Herbert S., Charleston, W. Va. (In principle.)  
 Lake Washington Shipyards, Houghton, Wash.  
 Lange & Crist Box & Lumber Co., Inc., Clarksburg, W. Va.  
 Larrick, Thomas, Athens, Ohio.  
 Lawrence, Holford & Allyn, Portland, Ore.  
 Lester Lumber Co., Inc., Martinsville, Va.  
 Levy, Will, St. Louis, Mo.  
 Lewis Lumber Co., Spring Lake, N. J.  
 Liberty Lumber & Manufacturing Co., Inc., Erwin, Tenn.  
 Lightsey Bros., Miley, S. C.  
 Link-Newcomb Mill & Lumber Co., Tchula, Miss.  
 Lockhart International, Inc., New York, N. Y. (In principle.)  
 Lockman, Frederick V., Portland, Ore.  
 Loeb, Laurence M., White Plains, N. Y.  
 Long Bell Lumber Co., The, De Ridder, La.  
 Los Angeles, City of, Los Angeles, Calif.  
 Lovatt, George I., Philadelphia, Pa. (In principle.)  
 Loveman Lumber & Box Co., A. M., Nashville, Tenn.  
 Lyman-Hawkins Lumber Co., The, Akron, Ohio.  
 Lynch & Foard, Wilmington, N. C.

- Lynchburg Lumber Manufacturing Co., Inc., Lynchburg, Va.
- Mabrey, George R., New York, N. Y.
- Madary's Planing Mill, Fresno, Calif.
- Mahlstedt Allied Materials, Inc., New Rochelle, N. Y.
- Mahood, Alex B., Bluefield, W. Va.
- Mann & Co., Hutchinson, Kans.
- Markland Contracting Co., M. B., Atlantic City, N. J.
- Martin, Edgar, Chicago, Ill.
- Martin & Son, A. Oscar, Doylestown, Pa.
- Mason & Co., George D., Detroit, Mich.
- Mason & Sons, Inc., A., Peru, Clinton County, N. Y.
- Massena & duPont, Inc., Wilmington, Del.
- Mauran, Russell, Crowell & Mullgardt, St. Louis, Mo.
- McCracken & McCall, Inc., Lexington, Ky.
- McMillen Co., The R., Oshkosh, Wis. (In principle.)
- McMinnville Manufacturing Co., McMinnville, Tenn.
- Meadow River Lumber Co., The, Rainelle, W. Va.
- Mechanics Millwork Co., Fort Smith, Ark.
- Meckelburg Sash & Door Co., Milwaukee, Wis.
- Mengel Co., The, Louisville, Ky.
- Michigan Pole & Tie Co., Newberry, Mich.
- Millard, Julian, Hamsburg, Pa. (In principle.)
- Miller Bros. Co., Inc., Johnson City, Tenn.
- Miller & Yeager, Terre Haute, Ind.
- Modern Woodwork Co., Milwaukee, Wis.
- Molther, F. R., Ancon, Canal Zone.
- Montague Millwork Co., Richmond, Va.
- Monteath Co., J. H., New York, N. Y.
- Moore, Alvin Roger, Atlanta, Ga.
- Mooser, William, San Francisco, Calif.
- Morgan Manufacturing Co., Black Mountain, N. C.
- Morgan Millwork Co., Baltimore, Md.
- Morrison, Gross & Co., Erwin, W. Va.
- Mueller, Frederick G., W. R. Hair, Hamilton, Ohio.
- Muhlenberg Bros., Reading, Pa.
- Muhlenberg, Yerkes & Muhlenberg, Reading, Pa.
- Mundie, Jensen, Bourke & Havens, Chicago, Ill.
- National Sash & Door Co. (Hortman-Salmen Co., Inc., Owner), New Orleans, La.
- Nelson, Albert L., St. Louis, Mo.
- New Orleans, Inc., Better Business Bureau of, New Orleans, La. (In principle.)
- Nickey Brothers, Inc., Memphis, Tenn.
- Noelke Lyon Manufacturing Co., The, Burlington, Iowa.
- Northern Lumber Co., Billings, Mont.
- Officer, Gwynn, Berkeley, Calif.
- Oklahoma, University of, Norman Okla.
- Overstreet, N. W., Jackson, Miss.
- Owen Co., R. C., Hopkinsville, Ky.
- Owens-Parks Lumber Co., Los Angeles, Calif.
- Pacific Lumber Co., The, San Francisco, Calif. (In principle.)
- Pancoast, Russell T., Miami Beach, Fla.
- Pardee & Curtin Lumber Co., Clarksburg, W. Va.
- Parmelee, M. E., Knoxville, Tenn. (In principle.)
- Paterson-McInnis Lumber Co., Gulf Hammock, Fla.
- Patten-Blinn Lumber Co., Los Angeles, Calif.
- Pease Woodwork Co., Inc., Cincinnati, Ohio.
- Peers & McGlone, Pine Bluff, Ark.
- Pehrson, G. A., Spokane, Wash.
- Phoenix Box & Lumber Co., Toledo, Ohio.
- Plachek, James W., Berkeley, Calif.
- Putnam Lumber Co., Calvin, Danvers, Mass.
- Quayle & Treganza, San Diego, Calif.
- Reid, William H., Jr., Billings, Mont.
- Remington Yards, Hibbing, Minn.
- Reynolds Lumber Co., The, New London, Ohio.
- Rib Lake Lumber Co., Rib Lake, Wis.
- Rindge & Rindge, Grand Rapids, Mich.
- Ritchie & Associates, James H., Boston, Mass.
- Ritter Lumber Co., W. M., Columbus, Ohio.
- Robbins Flooring Co., Rhinelander, Wis.
- Robert & Co., Inc., Atlanta, Ga.
- Roberts Corporation, U. N., Davenport, Iowa.
- Rohrer Lumber Co., D. J., Clintonville, Wis.
- Rose & Co., D. M., Knoxville, Tenn.
- Rounds & Porter Co., Wichita, Kans.
- Rowley & Sons, Inc., Fred C., Hammond, Ind.
- Sacramento, Better Business Bureau of, Sacramento, Calif.
- Saint Paul & Tacoma Lumber Co., Tacoma, Wash.
- Sawyer Woodworking Co., Joilet, Ill.
- Scamell, Ralph E., Topeka, Kans.
- Schirmer, R. F., Woodhaven, N. Y.
- Schoeppe, Edward, Philadelphia, Pa.
- Schulzke, William H., Moline, Ill.
- Schutte Lumber Co., Kansas City, Mo.
- Scott, Carl W., Detroit, Mich.
- Sells Lumber & Manufacturing Co., Johnson City, Tenn.
- Shanley, George H., Great Falls, Mont.
- Shaver, Chas. W., Salina, Kans.

- Sheif Co., Inc., Jerome, Apalachicola, Fla.
- Shenk Co., Henry, Erie, Pa.
- Shire, Edward I., New York, N. Y.
- Shutts & Morrison, Erie, Pa.
- Sidells, Arthur F., & Ellis M. Keppel, Warren, Ohio.
- Sirrine & Co., J. E., Greenville, S. C.
- Sleeper, H. R., New York, N. Y.
- Smith Lumber Co., Inc., W. T., Chapman, Ala.
- Smith, Werner & Billings, Alexandria, Va., and Washington, D. C.
- Snedaker & Co., Inc., Frank C., Philadelphia, Pa.
- Snellstrom Lumber Co., Eugene, Oreg.
- Sothman Co., The, Grand Island, Nebr.
- Southern Lumber Co., Warren, Ark.
- Spahn & Rose Lumber Co., Dubuque, Iowa.
- Specification Record, Chicago, Ill.
- Spencer, Eldridge, T., San Francisco Calif.
- Spokane Pine Products Co., Spokane, Wash.
- Standard Lumber & Supply Co., Fort Wayne, Ind.
- Start, Cedric, Hollywood, Fla.
- Staub, John F., Houston, Tex.
- Stephenson Co., I., Wells, Delta County, Mich.
- Stoetzel, Ralph E., Chicago, Ill.
- Strable Hardwood Co., Oakland, Calif.
- Stravs, Carl B., Minneapolis, Minn.
- Sullivan Hardwood Lumber Co., San Diego, Calif.
- Sun Lumber Co., Weston, W. Va.
- Swan Lake Moulding Co., Klamath Falls, Oreg.
- Sweet's Catalog Service, New York, N. Y. (In principle.)
- Taylor, Ellery K., Philadelphia, Pa.
- Taylor, Henry L., St. Petersburg, Fla.
- Taylor, Edward Cray, & Ellis Wing Taylor, Los Angeles, Calif.
- Tennessee Flooring Co., Knoxville, Tenn.
- Texas Technological College, Department of Architecture & Allied Arts, Lubbock, Tex. (In principle.)
- Thompson Lumber Co., Minneapolis, Minn.
- Thorne, Henry Calder, Ithaca, N. Y.
- Throop-Martin Co., The, Columbus, Ohio.
- Tilden & Pepper, Philadelphia, Pa.
- Townsend Band Mill Co., Townsend, Ga.
- Tremont Lumber Co., Rochelle, La.
- Trexler Lumber Co., Allentown, Pa.
- Trimble, R. Maurice, Pittsburgh, Pa.
- Troast & Associates, N. Lester, Juneau, Alaska.
- Underwood Veneer Co., Wausau, Wis.
- Union Planing Mill, Inc., Stockton, Calif.
- Vallamont Planing Mill Co., Williamsport, Pa.
- Virginia Polytechnic Institute, Blacksburg, Va.
- Vogel, Willis A., Toledo, Ohio.
- Walsh, Louis A., Waterbury, Conn.
- Washington Woodworking Co., Inc., Washington, D. C.
- Weinberg, Jos. L., Cleveland, Ohio.
- Welch, Carroll E., Huntington, N. Y.
- Wells Lumber Co., J. W., Montgomery, Ala.
- Welsh Lumber Co., Memphis, Tenn.
- Western Hardwood Lumber Co., Los Angeles, Calif.
- Western Reserve Lumber Co., The, Warren, Ohio.
- Western Woodworking Co., Bellingham, Wash.
- Whissel Lumber Co., Inc., L. N., Buffalo, N. Y.
- White Bros., San Francisco, Calif.
- Whitmer-Jackson Co., Inc., The, Buffalo, N. Y.
- Whittier Lumber & Millwork Co., Newark, N. J.
- Whitworth, Henry P., Miami, Fla.
- Wiles-Chipman Lumber Co., St. Louis, Mo.
- Willatsen, Andrew, Seattle, Wash.
- Willingham & Co., Chattanooga, Tenn.
- Willingham-Tift Lumber Co., Atlanta, Ga.
- Willson, Fred F., Bozeman, Mont.
- Wilson Lumber Co., Hot Springs, Ark.
- Winslow, Ralph E., Troy, N. Y.
- Wischmeyer, Wm. F., St. Louis, Mo.
- Woltersdorf, Arthur, Chicago, Ill.
- Wood Lumber Co., E. K., Los Angeles, Calif.
- Wood-Mosaic Co., Inc., Louisville, Ky.
- Wood & Son, Associates, Edward J., Clarksburg, W. Va.
- Wright, Frank H., Detroit, Mich. (In principle.)
- Yawkey-Bissell Lumber Co., White Lake, Wis.
- Zimmerman, A. C., Los Angeles, Calif.
- Zinn Lumber Co., J. H., Columbus, Ohio.
- Zoller & Muller, New York, N. Y.

## U. S. GOVERNMENT

- Agriculture, U. S. Department of, Bureau of Agricultural Chemistry & Engineering, Washington, D. C.
- Federal Loan Agency, Federal Housing Administration, Washington, D. C. (In principle.)
- Federal Works Agency, Public Buildings Administration, Washington, D. C. (In principle.)
- Federal Works Agency, United States Housing Authority, Washington, D. C.
- Federal Works Agency, Work Projects Administration, New York, N. Y.
- Treasury Department, Washington, D. C.
- War Department, Washington, D. C.



## COMMERCIAL STANDARDS

CS No.	Item
0-40.	Commercial standards and their value to business (third edition).
1-32.	Clinical thermometers (second edition).
2-30.	Mopsticks.
3-40.	Stoddard solvent (third edition).
4-29.	Staple porcelain (all-clay) plumbing fixtures.
5-40.	Pipe nipples; brass, copper, steel, and wrought iron.
6-31.	Wrought-iron pipe nipples (second edition). Superseded by CS5-40.
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. Superseded by CS5-40.
11-29.	Regain of mercerized cotton yarns.
12-40.	Fuel oils (fifth edition).
13-39.	Dress patterns (second edition).
14-39.	Boys' button-on waists, shirts, junior and polo shirts (made from woven fabrics) (second edition).
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).
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22-40.	Builders' hardware (nontemplate) (second edition).
23-30.	Feldspar.
24-30.	Standard screw threads.
25-30.	Special screw threads.
26-30.	Aromatic red cedar closet lining.
27-36.	Mirrors (second edition).
28-32.	Cotton fabric tents, tarpaulins, and covers.
29-31.	Staple seats for water-closet bowls.
30-31.	Colors for sanitary ware.
31-38.	Wood shingles (fourth 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 (hardwood and eastern red cedar).
36-33.	Fourdrinier wire cloth (second edition).
37-31.	Steel bone plates and screws.
38-32.	Hospital rubber sheeting.
39-37.	Wool and part wool blankets (second edition).
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.
45-40.	Douglas fir plywood (domestic grades) (fourth edition).
46-40.	Hosiery lengths and sizes (third edition).
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 articles made of silver in combination with gold.
52-35.	Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).
53-35.	Colors and finishes for cast stone.
54-35.	Mattresses for hospitals.
55-35.	Mattresses for institutions.
56-36.	Oak flooring.
57-40.	Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
58-36.	Woven elastic fabrics for use in overalls (overall elastic webbing).
59-39.	Woven dress fabrics—testing and reporting (second edition).
60-36.	Hardwood dimension lumber.
61-37.	Wood-slat venetian blinds.
62-38.	Colors for kitchen accessories.
63-38.	Colors for bathroom accessories.
64-37.	Walnut veneers.
65-38.	Wool and part-wool fabrics.
66-38.	Marking of articles made wholly or in part of platinum.
67-38.	Marking articles made of karat gold.
68-38.	Liquid hypochlorite disinfectant, deodorant, and germicide.
69-38.	Pine oil disinfectant.
70-38.	Coal tar disinfectant (emulsifying type).
71-38.	Cresylic disinfectants.
72-38.	Household insecticide (liquid spray type).
73-38.	Old growth Douglas fir standard stock doors.
74-39.	Solid hardwood wall paneling.
75-39.	Automatic mechanical draft oil burners.
76-39.	Hardwood interior trim and molding.
77-40.	Sanitary cast-iron enameled ware.
78-39.	Ground-and-polished lenses for sun glasses.
79-39.	Blown, drawn, and dropped lenses for sun glasses.
80-41.	Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
81-41.	Adverse-weather lamps for vehicles (after market).
82-41.	Inner-controlled spotlamps for vehicles (after market).
83-41.	Clearance, marker, and identification lamps for vehicles (after market).
84-41.	Electric tail lamps for vehicles (after market).
85-41.	Electric license-plate lamps for vehicles (after market).
86-41.	Electric stop lamps for vehicles (after market).
87-41.	Red electric warning lanterns.
88-41.	Liquid-burning flares.
89-40.	Hardwood stair treads and risers.

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice 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.