FACTORY-FITTED DOUGLAS FIR ENTRANCE DOORS

COMMERCIAL STANDARD CS91-41

Effective Date for New Production from February 10, 1941

A RECORDED VOLUNTARY STANDARD OF THE TRADE
PROMULGATION

of

COMMERCIAL STANDARD CS91-41

for

FACTORY-FITTED DOUGLAS FIR

ENTRANCE DOORS

On January 19, 1940, at the instance of the Fir Door Institute, a proposed commercial standard for factory-fitted Douglas fir entrance doors was submitted to manufacturers, and to distributor and consumer organizations, for comment. An adjusted draft was then 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 February 10, 1941.

Promulgation recommended.

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

Promulgated.

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

Promulgation approved.

Jesse H. Jones,
Secretary of Commerce.
FACTORY-FITTED DOUGLAS FIR ENTRANCE DOORS

COMMERCIAL STANDARDS CS91–41

PURPOSE

1. The purpose of this commercial standard is to establish standard specifications for factory-fitted Douglas fir entrance doors for the guidance of producers, distributors, and users; to provide a uniform basis for guaranteeing compliance through the use of labels or certification; to avoid delays and misunderstandings; and to effectuate economies through the broader use of factory-fitted entrance doors.

2. In the development of this standard there is no desire to suppress architectural expression, and custom-made doors will still be available from the usual sources.

SCOPE

3. This standard provides minimum specifications for one grade of factory-fitted Douglas fir entrance doors 1¾ in. thick. It covers 27 layouts, 25 of which are panel or sash doors and 2 are flush doors. All doors are available in two sizes, 3 ft by 6 ft 8 in. and 3 ft by 7 ft. It also covers packaging, inspection, nomenclature and definitions, and the method of certification of compliance with this standard. Detail schedules of layouts are listed beginning on page 4.

GENERAL REQUIREMENTS

4. All commercial standard factory-fitted fir entrance doors shall meet the following general requirements:

5. Material.—Doors shall be made of 100 percent heartwood, kiln-dried, old-growth Douglas fir.

6. Workmanship.—Doors shall be well manufactured and machined, and all flat surfaces of both faces shall be smoothly sanded.

7. Thickness.—Doors shall be 1¾ in. thick, and a thickness tolerance of minus ¼ in. shall be allowed.

8. Seasoning.—The material shall be kiln-dried according to accepted methods to a proper and uniform moisture content.

9. Packaging.—Each door shall be scuff-striped on the top and bottom edges and securely wrapped in heavy paper or cartoned to prevent damage while in storage and transit.
DETAIL REQUIREMENTS

10. Size.—Doors shall be 3 ft by 6 ft 8 in. or 3 ft by 7 ft, as specified. They shall be accurately cut to size, within a tolerance of ±1/32 in.

11. Panel and sash doors.

12. Construction.—Shall be assembled by what is known as “dowelled construction”; (see fig. 1) that is, stiles and rails to be bored to receive fir dowels not less than 5/8 in. in diameter by not less than 5 in. long. The dowels shall have glue grooves. Dowels shall be set in water-resistant glue and shall extend approximately one-half their length into each stile and rail, and assembled under pressure. Rails 6 in. or less in width shall have two dowels; there shall be one additional dowel for each additional 3 in. in width or fraction thereof.

For rails 6 in. or less in width, two dowels at each end. One additional dowel at each end for each additional 3 in. in width or fraction thereof. Dowels not less than 5/8 in. in diameter and not less than 5 in. long with glue grooves.

13. Stiles and rails.—Stiles and rails shall be of 100 percent heartwood, selected, all vertical grain old-growth Douglas fir, the faces of which must be clear, with the exception that each stile may contain one carefully repaired pitch seam on each side, provided that such pitch seam does not extend through the piece nor exceed 3½ in. in length. Such pitch seams shall not be over 35 in. from the bottom of the door. Bottom rail may contain one neatly repaired pitch seam, the same as the stiles.

14. Panels.—All panels shall be raised, solid, and 3/4 in. thick, of 100 percent heartwood, selected, all vertical grain old-growth Douglas fir, the faces of which must be clear. Panels shall be raised
one or two sides as specified, except door number 2015, which shall have panels raised on both sides. (See fig. 2.)

15. Glazing.—Doors having glass openings, indicated on designs by “G,” are available only as shown under designs and layouts beginning on page 4. Glass is not furnished.

16. Sticking.—Either 7/8-in. “wide sticking ‘A’ or ‘B’” or 1/2-in. “ovolo” sticking will be furnished around panels as specified, unless otherwise indicated on layouts. (See fig. 2.) Defective sticking which may develop in machining must be carefully repaired or neatly replaced.

17. Raised moldings.—Unless otherwise indicated on layouts, doors with raised molding on one side, around panels, are regularly available.

18. Flush doors.—(Designs 2025 and 2030).

19. Construction.—The core for flush doors shall be constructed of stiles not less than 4 in. wide, filled in between with strips properly jointed and glued, forming a solid core. The core shall be redried and finished to a smooth surface before applying the crossbanding.
The stiles may be of one piece or built up of two or more strips well-glued together. The crossbandings and face veneers shall be glued to each side of the core with water-resistant glue and assembled under pressure. Doors may be five- or seven-ply construction at the option of the manufacturer.

20. Veneers.—The veneers on each side of the core shall be of the same thickness. The face veneers for slab doors having V-grooves on one face (design 2025) may be rotary cut or vertical grain, as specified. If rotary cut, it shall be not less than $\frac{1}{8}$ in. thick before sanding, while if it is vertical grain, it shall be either of one thickness not less than $\frac{1}{4}$ in., or two thicknesses of $\frac{1}{8}$ in. each before sanding. For plain flush doors (design 2030) the face veneers may be rotary cut or vertical grain, as specified, not less than $\frac{1}{8}$ in. thick before sanding. Crossbandings shall be not less than $\frac{1}{16}$ in. or more than $\frac{1}{8}$ in. thick.

**FACTORY-FITTED DOUGLAS FIR ENTRANCE DOOR LIST**

21. The layouts and designs for factory-fitted Douglas fir entrance doors are illustrated beginning below.

22. Measurements for stiles, rails, and muntins shown in layouts are over-all, including sticking.

<table>
<thead>
<tr>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiles and top rail</td>
<td>5 1/8&quot;</td>
</tr>
<tr>
<td>Lock rail</td>
<td>11 1/4&quot;</td>
</tr>
<tr>
<td>Intermediate rail and muntins</td>
<td>9 1/4&quot;</td>
</tr>
<tr>
<td>Bottom rail</td>
<td>9 1/8&quot;</td>
</tr>
<tr>
<td>Height from bottom of door to top of lock rail</td>
<td>36 1/4&quot;</td>
</tr>
<tr>
<td>Height from top of door to bottom of intermediate rail</td>
<td>18 1/2&quot;</td>
</tr>
<tr>
<td>Height of center panels varies with height of door.</td>
<td></td>
</tr>
</tbody>
</table>

**Raised molding one side—optional.**

<table>
<thead>
<tr>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stiles</td>
<td>5 1/8&quot;</td>
</tr>
<tr>
<td>Top rail</td>
<td>6 1/8&quot;</td>
</tr>
<tr>
<td>Lock rail</td>
<td>9 3/8&quot;</td>
</tr>
<tr>
<td>Intermediate rail and muntins</td>
<td>9 3/8&quot;</td>
</tr>
<tr>
<td>Bottom rail</td>
<td>9 3/8&quot;</td>
</tr>
<tr>
<td>Bars between glass</td>
<td>1 1/2&quot;</td>
</tr>
<tr>
<td>Height from bottom of door to top of lock rail</td>
<td>36 3/8&quot;</td>
</tr>
<tr>
<td>Height from top of door to bottom of intermediate rail</td>
<td>19&quot;</td>
</tr>
<tr>
<td>Height of top panels varies with height of door.</td>
<td></td>
</tr>
</tbody>
</table>

**Sticking:** Ovolo or wide sticking "A" or "B." around panels only. Ovolo sticking and glass bead around openings for glass.

**Raised molding one side around panels only—optional.**

Glass not furnished.

All doors 1 3/4 inches thick.
Stiles and top rail: 5%" 5%" 5%" 5%"
Lock rail: 5%" 8%" 9%" 9%"
Intermediate rails and muntins: 5%" 5%" 8%" 9%"
Bottom rail: 11%" 9%" 9%" 9%"

Sticking: Ovolo or wide sticking "A" or "B."
Raised molding one side—optional.
Panels equal.

Panels 3/4" raised 2 sides only.
Sticking: Ovolo or wide sticking "A" or "B."
Raised molding one side—optional.

Stiles and top rail: 5%" 5%" 5%" 5%"
Lock rail: 5%" 8%" 9%" 9%"
Intermediate rails and muntins: 5%" 5%" 8%" 9%"
Bottom rail: 11%" 9%" 9%" 9%"

5 equal grooves—one face.
Rotary cut face veneers not less than 1/4" thick before sanding.
5- or 7-ply construction at manufacturers' option.
Can also be furnished with vertical grain face veneers not less than 1/4" thick or two thicknesses of 3/8" each before sanding.

All doors 1¾ inches thick.
Rotary cut face veneers not less than \( \frac{3}{8} \)" thick before sanding.

5- or 7-ply construction at manufacturers' option.

Can also be furnished with vertical grain face veneers not less than \( \frac{3}{8} \)" thick or two thicknesses of \( \frac{3}{8} \)" each before sanding.

Stiles and top rail ........................................... 5\( \frac{3}{4} \)"
Lock rail ...................................................... 7\( \frac{3}{4} \)"
Bottom rail ................................................... 8\( \frac{3}{4} \)"
Cross bucks .................................................. 4\( \frac{7}{8} \)"
Bars between glass ......................................... \( \frac{1}{2} \)"
Height from bottom of door to top of lock rail ........................................... 38\( \frac{3}{4} \)"

Sticking: Ovolo only and ovolo bead around openings for glass.

Raised molding not furnished.

Glass not furnished

All doors 1\( \frac{3}{4} \) inches thick.
### Fitted Fir Entrance Doors

#### 2050
- **Stiles and top rail**: 5 5/8"
- **Lock rail**: 4 1/8"
- **Intermediate rails and muntins**: 4 1/8"
- **Bottom rail**: 11 3/8"
- **Height from top of door to bottom of upper intermediate rail**: 20 5/8"
- **Height from bottom of door to top of lower intermediate rail**: 23 5/8"

**Sticking:** Ovolo or wide sticking “A” or “B.”

**Raised molding one side—optional.**

**Wicket-sash furnished.**

**Grille optional.**

**Glass not furnished.**

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#### 2055
- **Stiles and top rail**: 5 5/8"
- **Lock rail**: 3 3/4"
- **Intermediate rails and muntins**: 3 3/4"
- **Bottom rail**: 3 3/4"
- **Height from top of door to bottom of horizontal muntin**: 22 5/8"

**Height from top of door to bottom of upper intermediate rail**: 11 3/8"

**Sticking:** Ovolo or wide sticking “A” or “B.”

**Raised molding one side—optional.**

**Wicket-sash furnished.**

**Grille optional.**

**Glass not furnished.**

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**All doors 1 1/4 inches thick.**
Stiles and top rail .................................. 5½"
Lock rail ........................................ 9½"
Intermediate rail and muntins .................. 55½"
Bottom rail ..................................... 9½"
Height from bottom of door to top of lock rail ............................. 36½"

Sticking: Ovolo or wide sticking “A” or “B”.

“L” molding and bullnose bead.  
around openings for glass.  
(Ovolo bead if ovolo sticking.)

Raised molding one side—optional.  
Glass not furnished.

Stiles and top rail .................................. 5½"
Intermediate rails and muntins .................. 33½"
Bottom rail ..................................... 11½"
Height from top of door to bottom of upper intermediate rail .................................. 34½"

Sticking: Ovolo or wide sticking “A” or “B.”

Raised molding one side—optional.  
Wicket-sash furnished.  
Grille optional.  
Glass not furnished.

All doors 1¾ inches thick.
Fitted Fir Entrance Doors

2090

Stiles and top rail ........................................... 54½"
Intermediate rails and muntins .......................... 33½"
Bottom rail .................................................. 9¼"

Sticking: Ovolo or wide sticking "A" or "B."

"L" molding and bullnose bead around openings for glass. (Ovolo bead if ovolo sticking.)

Raised molding one side—optional.

Panels equal.

Wicket-sash and glass not furnished.

2095

Stiles and top rail ........................................... 54½"
Intermediate rails and muntins .......................... 33½"
Bottom rail .................................................. 11¾"

Sticking: Ovolo or wide sticking "A" or "B."

Raised molding one side—optional.

Wicket-sash furnished.

Grille optional.

Glass not furnished.

2100

Stiles and top rail ........................................... 54½"
Lock rail .................................................... 3¾"
Intermediate rails and muntins .......................... 3¾"
Bottom rail .................................................. 9¼"

Sticking: Ovolo or wide sticking "A" or "B."

Raised molding one side—optional.

Panels equal.

2105

Stiles and top rail ........................................... 54½"
Lock rail .................................................... 7¼"
Intermediate rail and muntin ............................ 4¾"
Bottom rail .................................................. 8¾"
Cross bucks .................................................. 4½"
Bars between glass ........................................ 2½"
Height from bottom of door to top of lock rail ...... 38½"

Sticking: Ovolo only and ovolo bead around openings for glass.

Raised molding not furnished.

Glass not furnished.

All doors 1¾ inches thick.
Stiles and top rail ........................................... 5⅛"  
Intermediate rails and muntins ................................... 3⅞"  
Bottom rail .................................................. 1⅝"

Sticking: Ovolo or wide sticking "A" or "B."

Raised molding one side—optional.
Wicket-sash furnished.
Grille optional.

Glass not furnished.

All doors 1⅝ inches thick.
23. All doors sold as conforming to this commercial standard are subject to inspection in the condition received, and complaints regarding any shipment shall be made within five (5) days after receipt thereof. Any rejected doors shall be held, properly protected, for a period of three (3) weeks after notice of rejection and pending adjustment.

CERTIFICATION AND MARKING

24. In order to assure the purchaser that he is getting factory-fitted Douglas fir entrance doors of the high quality covered by this specification, producers may individually or in concert with their trade association, or inspection bureau, certify specific shipments or mark each door by stamp, brand, or label as conforming to the commercial standard.

25. The appearance of this Fir Door Institute label, as applicable to factory-fitted Douglas fir entrance doors, is a guarantee by the manufacturer that the door conforms to Commercial Standard CS91-41, including all-heart, vertical grain, factory-fitted, individually packed, scuff-striped, trade-marked, old-growth Douglas fir doors and subject to control inspection by the Fir Door Institute.
NOMENCLATURE AND DEFINITIONS

Check.—A lengthwise separation of the wood which occurs across the rings of annual growth.

Core.—The core is the innermost layer in flush door construction.

Crossbanding.—The veneer used in the construction of flush doors, which is placed between the core and face veneer, with the direction of the grain at right angles to that of the face veneer.

Flush door.—Made up of a core, crossbanding, and face veneers.

Heartwood.—The darker-colored wood occurring in the inner portion of the tree, sometimes referred to as “heart.”

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.

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

Muntin.—Any short or light bar, either vertical or horizontal, in a door, between glass or panels and not extending the full width or length of the door.

Panel door.—Made up of stiles, rails, and one or more panels, the stiles and rails forming the frame around the panel.

Pitch seam.—A shake or check which is filled with pitch.

Rail.—The cross, or horizontal, piece of the framework of the door.

Sash door.—Same as panel door, except one or more panels are replaced by glass.

Shake.—A lengthwise separation of the wood, which occurs usually between and parallel to the rings of annual growth.

Stiles.—The upright, or vertical, outside pieces of a door.

Vertical grain.—Vertical grain lumber has been sawed parallel with the pith of the log and approximately at right angles to the growth rings; that is, the rings form an angle of 45 degrees or more with the surface of the piece.

EFFECTIVE DATE

The standard is effective for new production from February 10, 1941.

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 representative. 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:
W. P. Woolley (chairman), Fir Door Institute, Tacoma, Wash.
A. C. Erickson, M & M Woodworking Co., Portland, Oreg.
**Fitted Fir Entrance Doors**

**Distributors:**

National Association of Wood Work Jobbers, Inc. (Invited to name representative.)
Western Retail Lumbermen's Association. (Invited to name representative.)

**Users:**

Earl W. Macy, Property Standards Section, Technical Division, Federal Housing Administration, Washington, D.C.
Theodore Irving Coe, The Department of Technical Services, American Institute of Architects, 1741 New York Ave. NW., Washington, D.C.
A. G. Bear, Construction Service, Veterans' Administration, Washington, D.C.

**HISTORY OF PROJECT**

On August 10, 1939, the Fir Door Institute requested the cooperation of the National Bureau of Standards in the establishment of a commercial standard for factory-fitted Douglas fir entrance doors. A draft of a proposed commercial standard was submitted to producers, and to a large number of distributor and consumer organizations, for their 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 October 14, 1940, to 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 CS91-41, effective for new production from February 10, 1941.
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 CS91-41 as our standard of practice in the

Production \(^1\) Distribution \(^1\) Use \(^1\)

of factory-fitted Douglas fir entrance doors.

We will assist in securing its general recognition and use and will cooperate with the standing committee to effect revisions of the standards 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: __________________________________________

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1 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 standards 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.
ACCEPERS

The organizations and individuals listed below have accepted this commercial standard as their standard of practice in the production, distribution, and use of factory fitted Douglas fir entrance doors. 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 quality certification should be obtained where required.

ASSOCIATIONS

American Specification Institute, Chicago, Ill.
Appalachian Hardwood Manufacturers., Inc., Cincinnati, Ohio.
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.)
Fir Door Institute, Tacoma, Wash.
Mississippi Retail Lumber Dealers Association, Inc., Jackson, Miss.
National Hardwood Lumber Association, Chicago, Ill. (In principle.)
Ohio Association of Retail Lumber Dealers, The, Xenia, Ohio.
West Coast Lumbermen's Association, Seattle, Wash. (In principle.)
Wisconsin Retail Lumbermens Association, Milwaukee, Wis.

FIRMS

A One Building Material Co., Evansville, Ind.
Acme Door Co., Hoquiam, Wash.
Adams, Franklin O., Tampa, Fla.
Allen, George W., LaPorte, Ind.
Allison & Allison, Los Angeles, Calif.
Amarillo Sash & Door Co., Amarillo, Tex.
American Sash & Door Co., Kansas City, Mo.
Anderson Lumber Co., Ogden, Utah.
Andrews, Jones, Biscoe & Whitmore, Boston, Mass.
Auler, Jensen & Brown, Oshkosh, Wis.
Austin, Ennis R., South Bend, Ind.
Bahe Co., Edward J., Chicago, Ill.
Balch & Lippert, Madison, Wis.
Barger Millwork Co., Statesville, N. C.
Baumer, Herbert, Columbus, Ohio.
Beacham & LeGrand, Greenville, S. C.
Beasley & Sons Co., Nashville, Tenn.
Becker Danowitz Co., Inc., Brooklyn, N. Y.
Bell Manufacturing Co., Inc., C. C., West Monroe, La.
Bettcher, Geo. F., Denver, Colo.
Beuttler & Arnold, Sioux City, Iowa.
Bial, George F., Hasbrouck Heights, N. J.
Bishop, Horatio W., Los Angeles, Calif.
Black Millwork & Lumber Co., Inc., Midland Park, N. J.
Blackburn, Inc., Robert, Milwaukee, Wis.
Blake, Edgar Ovet, Evanston, Ill.
Blatter, R. H., Washington, D. C.
Boehm, George A., New York, N. Y.
Borland Lumber Co., Oli City, Pa.
Bosman & Casson, Inc., Harrison, N. J.
Bovard, William R., Kansas City, Mo. (In principle.)
Brainerd, Harry B., New York, N. Y. (In principle.)
Braseth & Houkom, Fargo, N. Dak.
Brazer, Clarence W., New York, N. Y.
Brown, W. J., Cedar Rapids, Iowa.
Brust & Brust, Milwaukee, Wis.
Buchanan & Smock Lumber Co., Asbury Park, N. J.
Buechner & Orth, St. Paul, Minn. (In principle.)
Buffalo Plywood Corporation, Buffalo, N. Y.
Buffeleu Lumber & Manufacturing Co., Tacoma, Wash. & Fort Worth, Tex.
Building Service, Inc., Great Falls, Mont.
Burritt Lumber Co., The A. W., Bridgeport, Conn.
Byron Sash & Door Co., Inc., Louisville, Ky.
C-W Plywood Co., Chicago, Ill.
California Builders Supply Co., Oakland, Calif.
Cameron Lumber Co., Inc., Newburgh, N. Y.
Camlet, J. Thomas, Clifton, N. J.
Camp Plywood Co., Inc., The E. W., Indianapolis, Ind.
Candel, Rosario, New York, N. Y.
Cannon & Mullen, Salt Lake City, Utah.
Capital Lumber Co., Indianapolis, Ind.
Carder, Macon O., Amarillo, Tex.
Carlow Co., Los Angeles, Calif.
Carnahan Manufacturing Co., Loo- gootee, Ind.
Central Glazing Co., Fort Worth, Tex.
Cervin & Stuhr, Rock Island, Ill.
Chase Lumber Co., S. H., San Jose, Calif.
Chiaverini, Francis, Providence, R. I. (In principle.)
Churchill Cabinet Co., Chicago, Ill.
Cincinnati Butchers' Supply Co., The, Cincinnati, Ohio.
Clark, Carl W., Cortland, N. Y.
Clear Fir Lumber Co., Tacoma, Wash.
Cleary Millwork Co., Inc., Ansonia, Conn.
Clem Lumber Co., Dallas, Tex.
Cline Bros. Lumber Co., Inc., Kendal- ville, Ind.
Clinger's Sons, D., Milton, Pa.
Coit, E., New York, N. Y.
Combs Lumber Co., Inc., Lexington, Ky.
Conrad & Cummings, Binghamton, N. Y.
Conrow, H. S., Wichita, Kans.
Coolbaugh & Son Co., C. C., Gloucester City, N. J.
Coolidge, Shepley, Bulfinch & Abbott, Boston, Mass.
Cooper, David M., Ambridge, Pa.
Cornell University, College of Architec- ture, Ithaca, N. Y. (In principle.)
Cram & Ferguson, Boston, Mass.
Cross, Austin & Ireland Lumber Co., Brooklyn, N. Y.

Crowell & Lancaster, Bangor, Maine.
Cuthbert & Cuthbert, Ann Arbor, Mich.
D'Arcy Co., Dover, N. H.
De Jarnette, Charles Wagner, Des Moines, Iowa.
Delehanty, Andrew L., Albany, N. Y.
Denby, Edwin H., New York, N. Y.
District of Columbia, Engineer Depart- ment, Washington, D. C.
Dodge Corporation, F. W., Chicago, Ill.
Dodge & Morrison, New York, N. Y.
Donlin-Johnson Co., St. Cloud, Minn.
Dower Lumber Co., John, Tacoma, Wash.

Dunlap & Co., Inc., Columbus, Ind.
Eichenlaub, Geo. E., Erie, Pa.
Emery Industries, Inc., Cincinnati, Ohio.
English, Harold T., Hutchinson, Kans.
Estes Lumber Co., Birmingham, Ala.
Evans Lee Co., The, Eau Claire, Wis.
Evans MacArthur Co., New York, N. Y.
Evansville Sash & Door Co., Inc., Evans- ville, Ind.
Farrar & Loetscher Manufacturing Co., Dubuque, Iowa.
Fellheimer & Wagner, New York, N. Y.
Fink & Schindler Co., San Francisco, Calif.
Fischer Lime & Cement Co., Memphis, Tenn.
Fitz-Gibbon, T. David, Norfolk, Va.
Flannagan, Eric G., Henderson, N. C.
Florida, University of, School of For- estry, Gainesville, Fla. (In principle.)
Poltz & Son, Herbert, Indianapolis, Ind.
Foster Co., Inc., James J., Baltimore, Md.
Frantz & Spence, Saginaw, Mich.
Frederick Bros, Inc., Pottstown, Pa.
Gaertner, Otto, New York, N. Y.
Gall, Harry L. C., New York, N. Y.
Garber, Frederick W., Cincinnati, Ohio.
General Millwork Corporation, Utica, N. Y.
Gibb, The Office of Arthur N., Ithaca, N. Y.
Ginsberg & Sons, Inc., D., Corona, N. Y.
Gourley & Co., John, Highland Park, Ill.
Great Lakes Sash & Door Co., The, Cleveland, Ohio.
Greenstein, Louis, Buffalo, N. Y.
Hahn, Stanley W., Silver Spring, Md.
Hall-Gregg, Inc., Somerville, Mass.
Hallberg & Beersman, Chicago, Ill.
Hammond Lumber Co., Los Angeles, Calif.
Hannaford, Frederick T., Gainesville, Fla.
Hannaford & Sons, Samuel, Cincinnati, Ohio.
Harbor Plywood Corporation, Hoquiam, Wash.
Harbor Sales Co., Inc., Baltimore, Md. & Washington, D. C.
Hardin Sash & Door Co., H. H., Fort Worth, Tex.
Harley & Ellington, Detroit, Mich.
Hanssen, C. D., Harrisburg, Pa.
Hausman, N. W., Glen Cove, N. Y.
Havre Builders Supply Co., Havre, Mont.
Helfensteller, Hirsch & Watson, St. Louis, Mo.
Hentz, Adler & Shutze, Atlanta, Ga.
Hodgson & Son, Charles, Chicago, Ill.
Hogan Lumber Co., Oakland, Calif.
Holsman & Holsman, Chicago, Ill.
Home Supply Co., Kimberly, Wis.
Hope, Frank L., Jr., San Diego, Calif.
Hopkins, Albert Hart, Buffalo, N. Y.
Houston, Better Business Bureau of, Houston, Tex. (In principle.)
Hunter Lumber Co., Chillicothe, Ill.
Hutchings, E. T., Louisville, Ky.
Hyde-Murphy Co., Ridgway, Pa.
Independent Lumber Co., The Grand Junction, Colo.
Jefferson Wood Products Co., Jefferson, Wis.
Joannes, Francis Y., New York, N. Y.
Johnson, Keplar B., Seattle, Wash.
Johnson & Lundgren, Tacoma, Wash.
Johnson, Wallwork & Dukehart, Portland, Oreg.
Johnson & Wimsatt, Inc., Washington, D. C.
Jokel—Coy—Thal, Toledo, Ohio.
Jones Hardwood Co., San Francisco, Calif.
Kansas State College, Department of Architecture, Manhattan, Kans.
Karcher, Walter T., & Livingston Smith, Philadelphia, Pa. (In principle.)
Kelch & O'Brien, Warren, Ohio.
Kellogg & Sons Co., Charles C., Utica, N. Y.
Kilpatrick Brothers, Inc., Oklahoma City, Okla.
Knighton & Howell, Portland, Oreg.
Kohn, Robert D.,—Chas. Butler, New York, N. Y.
Kullberg Manufacturing Co., Minneapolis, Minn.
Kyle, Herbert S., Charleston, W. Va. (In principle.)
Larriek, Thomas, Athens, Ohio.

Law, Law & Potter, Madison, Wis.
Lawrence, Holford & Allay, Portland, Oreg.
Leuckel & Co., Inc., A. K., Trenton, N. J.
Levy, Will, St. Louis, Mo.
Lewis Lumber Co., Spring Lake, N. J.
Liberty Lumber & Manufacturing Co., Inc., Erwin, Tenn.
Lockman, Frederick V., Portland, Oreg.
Loetscher & Burch Manufacturing Co., Des Moines, Iowa.
Lumber Dealers Supply Co., Denver, Colo.
Lumber Dealers Supply Co., Cheyenne, Wyo.
Lumbermen's Supply Co., Sacramento, Calif.
Lumbermen's Supply Co., Monroe, La.
Lyman-Hawkins Lumber Co., The, Akron, Ohio.
Lynch & Foard, Wilmington, N. C.
Lyon-Gray Lumber Co., Dallas, Tex.
MacConnell, Inc., Malcolm, University City, Mo.
Mahlstedt Allied Materials, Inc., New Rochelle, N. Y.
Mann & Co., Hutchinson, Kans. (In principle.)
Maris Plywood Corporation, San Francisco, Calif.
Martin, Edgar, Chicago, Ill.
Martin & Son, A. Oscar, Doylestown, Pa.
Mason & Co., George D., Detroit, Mich.
Massena & du Pont, Inc., Wilmington, Del.
Mauk-Seattle Lumber Co., Seattle, Wash.
Maunran, Russell, Crowell & Mullgardt, St. Louis, Mo.
McGowin-Lyons Hardware & Supply Co., Mobile, Ala.
Millard, Julian, Harrisburg, Pa. (In principle.)
Miller & Yeager, Terre Haute, Ind.
Mock & Morrison, Tacoma, Wash.
Montague Millwork Co., Richmond, Va.
Mooser, William, San Francisco, Calif.
Morgan Millwork Co., Baltimore, Md.
Morgan Sash & Door Co., Oklahoma City, Okla.
Morrison-Merrill & Co., Salt Lake City, Utah.
Mueller, Fred G., & Walter R. Hair, Hamilton, Ohio.
Muhlenberg Brothers, Reading, Pa.
Muhlenberg, Yerkes & Muhlenberg, Reading, Pa.
National Plywood Co., Inc, New York, N. Y.
Nicolas Door Sales Co., San Francisco, Calif.
Northern Lumber Co., Billings, Mont.
Nurenburg, W. S., Fort Worth, Tex. Officer, Gwynn, Berkeley, Calif.
Ohio City Sash & Door Co., Dayton, Ohio.
Oregon Door Co., Portland, Oreg.
Pacific Mutual Door Co., Tacoma, Wash., and Chicago, Ill.
Pacific System Homes, Inc., Los Angeles, Calif.
Pancoast, Russell T., Miami Beach, Fla. Parker Building Specialties, Inc., San Francisco, Calif.
Pease Woodwork Co., Inc., Cincinnati, Ohio.
Pennsylvania State College, Department of Forestry, State College, Pa.
Pepper, George W., Jr., Philadelphia, Pa.
Perlin Lumber Co., Brooklyn, N. Y.
Phelps, Frederick A., Newark, N. J.
Platt & Brother, F. P., New York, N. Y.
Portsmouth Lumber Corporation, Portsmouth, Va.
Provine, L. H., Urbana, Ill. (In principle.)
Quigley Co., J. R., Gloucester City, N. J.
Radford Co., The, Oshkosh, Wis.
Reid, William H., Jr., Billings, Mont.
Remington Yards, Hibbing, Minn.
Richards, McCarty & Bulford, Columbus, Ohio.
Roberts Corporation, U. N., Davenport, Iowa.
Roddis Lumber & Veneer Co., Milwaukee, Wis.
Rogers Lumber Co., T. H., McAlester, Okla.
Rohrer Lumber Co., D. J., Clintonville, Wis.
Rounds & Porter Co., Wichita, Kans.
Ruggles Lumber Co., Carlos, Springfield, Mass.
Rutland Sash & Door Co., Inc., Rutland, Vt.
Sash, Door & Glass Corporation, Richmond, Va.
Schaeffer, Joseph C., New York, N. Y.
Schell-Sasse Manufacturing Co., Jacksonville, Fla.
Schirmer, Robert F., Woodhaven, New York, N. Y.
Searle & Chapin Lumber Co., Lincoln, Nebr.
Sears, Roebuck & Co., Chicago, Ill.
Shannon Sash & Door Co., Kansas City, Kans.
Sherman's Sons Co., R. A., Westerly, R. I.
Shire, Edward I., New York, N. Y.
Shutts & Morrison, Erie, Pa.
Simons Lumber Co., Henry, Minneapolis, Minn.
Simons Lumber & Manufacturing Co., Harry J., St. Paul, Minn.
Sirtine & Co., J. E., Greenville, S. C.
Sleeper, Harold R., New York, N. Y.
Smith, Wilton, San Francisco, Calif.
Smith Co., Geo. P., Charles City, Iowa.
Smith & Rumery Co., Portland, Maine.
Snell Sash & Door Co., St. Paul, Minn.
Southwestern Bell Telephone Co., St. Louis, Mo.
Southwestern Sash & Door Co., Joplin, Mo.
Southwestern Sash & Door Co., Inc., El Paso, Tex.
Specification Record, Chicago, Ill.
Stanley, F. W., Ft. Worth, Tex.
Staub, John F., Houston, Tex.
Steves Sash & Door Co., Corpus Christi, Tex.
Stoetzl, Ralph E., Chicago, Ill.
Strable Hardwood Co., Oakland, Calif.
Structural Service Bureau, Philadelphia, Pa.
Sweet's Catalog Service, New York, N. Y.
Taylor, Henry L., St. Petersburg, Fla.
Taylor Sash & Door Co., Pensacola, Fla.
Taylor, Edward Cray, & Ellis Wing Taylor, Los Angeles, Calif.
Teachout Co., The, Cleveland, Ohio.
Temple, Seth J., Davenport, Iowa. (In principle.)
Thomas, Glen H., Wichita, Kans.
Thorne, Henry Calder, Ithaca, N. Y.
Treganza, A. 0., Lemon Grove, Calif.
Tulsa Rig Reel & Manufacturing Co., Tulsa, Okla.
Underwood Coal & Supply Co., Mobile, Ala.
Union Planing Mill, Inc., Stockton, Calif.
Vaughan & Sons, Geo. C., Houston & San Antonio, Tex.
Veide Lumber Co., Pekin, Ill.
Vetter Manufacturing Co., Stevens Point, Wis.
Victoria Sash & Door Co., Inc., Shreveport, La.
Virginia Polytechnic Institute, Blacksburg, Va.
Vogel, Willis A., Toledo, Ohio.
Walker & Gillette, New York, N. Y.
Wanke Panel Co., Portland, Oreg.
Ward-Brock Sash & Door Co., The, Cincinnati, Ohio.
Warren Brothers Co., Nashville, Tenn.
Washington Woodworking Co., Inc., Washington, D. C.
Watertown Sash & Door Co., Watertown, S. Dak.
Webster & Wilson, Los Angeles, Calif.
Weimer & Sons, George, St. Albans, W. Va.
Weinberg, Joseph L., Cleveland, Ohio. (In principle.)
Welch, Carroll E., Huntington, N. Y.
Western Door & Sash Co., Oakland, Calif.
Wheeler Osgood Sales Corporation, Tacoma, Wash.
Wheelock, Inc., E. U., Los Angeles, Calif.
Whitaker, Courtney L., Dravosburg, Pa.
White Brothers, San Francisco, Calif.
Whitmer-Jackson Co., Inc., The, Buffalo, N. Y. & Cleveland, Ohio.
Whittier Lumber & Millwork Co., Newark, N. J.
Whitworth, Henry P., Miami, Fla.
Wiles-Chipman Lumber Co., St. Louis, Mo.
Wilkinson Co., Inc., The, Indianapolis, Ind.
Willatsen, Andrew, Seattle, Wash.
Willson, Fred F., Bozeman, Mont.
Wischmeyer, William F., St. Louis, Mo.
Wright, Frank H., Detroit, Mich. (In principle.)
Zoller & Muller, New York, N. Y.

U. S. GOVERNMENT

Federal Works Agency, United States Housing Authority, Washington, D. C. (In principle.)
Federal Works Agency, Work Projects Administration, Wilmington, Del.
Federal Works Agency, Work Projects Administration, Des Moines, Iowa.
Federal Works Agency, Work Projects Administration, Jacksonville, Fla.
Federal Works Agency, Work Projects Administration, Frederick, Md.
Federal Works Agency, Work Projects Administration, St. Paul, Minn.

Guam, Government of, Public Works Department, Guam.

Interior, Department of the, Office of Indian Affairs, Construction Division, Washington, D. C.

Navy Department, Bureau of Ships, David Taylor Model Basin, Washington, D. C.

Navy Department, United States Navy Yard, Portsmouth, N. H.

Navy Department, United States Navy Yard, Public Works Design Section, Pearl Harbor, T. H.

Treasury Department, Washington, D. C.

Veterans’ Administration, Washington, D. C.

War Department, Washington, D. C.

COMMERCIAL STANDARDS

<table>
<thead>
<tr>
<th>CS No.</th>
<th>Item</th>
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<tbody>
<tr>
<td>2-30.</td>
<td>Mopsticks.</td>
</tr>
<tr>
<td>4-29.</td>
<td>Staple porcelain (all-clay) plumbing fixtures.</td>
</tr>
<tr>
<td>5-40.</td>
<td>Pipe nipples; brass, copper, steel, and wrought iron.</td>
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</tbody>
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<tr>
<th>CS No.</th>
<th>Item</th>
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<tbody>
<tr>
<td>7-29.</td>
<td>Standard weight malleable iron or steel screwed unions.</td>
</tr>
<tr>
<td>11-29.</td>
<td>Regain of mercerized cotton yarns.</td>
</tr>
</tbody>
</table>
CS No. | Item
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15-29. | Men's pajamas.
16-29. | Wall paper.
18-29. | Hickory golf shafts.
23-30. | Feldspar.
25-30. | Special screw threads.
26-30. | Aromatic red cedar closet lining.
33-32. | Knit underwear (exclusive of rayon).
35-31. | Plywood (hardwood and eastern red cedar).
37-31. | Steel bone plates and screws.
38-32. | Hospital rubber sheeting.
40-32. | Surgeons' rubber gloves.
41-32. | Surgeons' latex gloves.
44-32. | Apple wraps.
47-31. | Marking of gold-filled and rolled-gold-plate articles other than watch cases.
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.

CS No. | Item
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55-35. | Mattresses for institutions.
57-40. | Book cloths, buckram, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
60-36. | Hardwood dimension lumber.
61-37. | Wood-slat venetian blinds.
63-38. | Colors for bathroom accessories.
64-37. | Walnut veneers.
65-33. | 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.
72-38. | Household insecticide (liquid spray type).
75-39. | Automatic mechanical draft oil burners.
77-40. | Phenolic resins for fast-iron enamelled ware.
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.
90- . | (Reserved for power shovels and cranes).
91-41. | Factory-fitted Douglas fir entrance doors.
92-41. | Cedar, cypress, and redwood tank stock lumber.

**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.