U. S. DEPARTMENT OF COMMERCE
HARRY L. HOPKINS, Secretary
NATIONAL BUREAU OF STANDARDS
LYMAN J. BRIGGS, Director

DOUGLAS FIR PLYWOOD

(DOMESTIC GRADES)

(THIRD EDITION)

COMMERCIAL STANDARD CS45-38

Effective Date for New Production November 10, 1938

A RECORDED STANDARD OF THE INDUSTRY

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PROMULGATION

of

COMMERCIAL STANDARD CS45–38

for

DOUGLAS FIR PLYWOOD

(DOMESTIC GRADES)

(THIRD EDITION)

On August 17, 1932, manufacturers, distributors, and users of Douglas fir plywood approved the adoption of standard grading rules for the guidance of the Douglas fir plywood industry. These grading rules were accepted by the industry and promulgated as Douglas Fir Plywood, Commercial Standard CS45–33. The standard was revised in 1936.

On suggestion of the Federal Housing Administration and following a series of conferences between representatives of the Forest Products Laboratory, F. H. A., and the plywood manufacturers, the Douglas Fir Plywood Association proposed a second revision of the standard so as to provide for two classes of moisture resistance. The proposal also included some changes in the sheathing grade. This revision was approved by the Standing Committee and was circulated for acceptance on September 16, 1938. The industry has since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the revised standard as shown herein.

The revised standard is effective for new production from November 10, 1938.

Promulgation recommended.

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

Promulgated.

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

Promulgation approved.

Harry L. Hopkins,
Secretary of Commerce.

DOUGLAS FIR PLYWOOD

(DOMESTIC GRADES)

(Third Edition)

COMMERCIAL STANDARD CS45–38

PURPOSE

1. Because of the extended application of Douglas fir plywood to a large number of new uses, the following standard grading rules are offered as a universal basis of understanding in the industry. General adoption and use of this standard will facilitate procurement of the proper grade of material and the proper class as to moisture resistance for its varied uses and provide a better understanding between buyer and seller. Architects, engineers, contractors, industrial users, and home owners will thus be able to specify their needs from nationally accepted grading standards.

SCOPE

2. These rules cover seven grades of Douglas fir plywood; a laminated board for paneling, sheathing, concrete forms, cabinet work, and many other structural and industrial uses. In addition, there are included grade specifications for door panels, moisture-resistance requirements, standard sizes, size tolerances, reinspection rules, and a glossary of terms.

DEFINITION

3. Douglas fir plywood is a built-up board of laminated veneers in which the grain of each piece is at right angles to the one adjacent to it. The kiln-dried veneer is united under high pressure with a bonding agent, making the joints as strong as or stronger than the wood itself. The alternating direction of the grain with each contiguous layer of wood equalizes the strains and in this way minimizes shrinkage and warping of the product and prevents splitting.

GENERAL REQUIREMENTS

4. All Douglas fir plywood sold as of commercial standard quality shall meet the following requirements:

5. *Workmanship.*—It shall be smoothly sanded on two sides unless otherwise specified. It shall be well manufactured and free from blisters, laps, and defects, except as permitted in the specific rules for the various grades.

6. *Construction.*—Veneers $\frac{1}{12}$ inch or more shall be used in the construction of panels $\frac{1}{4}$ inch and upward in thickness. The veneer thickness shall be measured before the panel is sanded.

7. *Bonding.*—The entire area of each contacting surface of the plywood shall be bonded in an approved manner with material best adapted to each use classification.

8. *Loading or packing.*—It shall be securely loaded or packed to insure delivery in a clean and serviceable condition.

DETAIL REQUIREMENTS

9. Douglas fir plywood shall be graded according to both sides of the piece into the following standard grades. The grade descriptions set forth the minimum requirements, and therefore the majority of panels in any shipment will exceed the specification given.

10. *Good 2 Sides* (*G2S*).—Each face shall be of a single piece of smoothly cut veneer of 100-percent heartwood, free from knots, splits, checks, pitch pockets, and other open defects. The faces shall be a yellow or pinkish color without stain. Shims that occur only at the ends of panels and inconspicuous well-matched small patches not to exceed ⅜ inch wide by 2½ inches long shall be admitted. This grade is recommended for uses where a light stain or natural finish is desired.

11. *Good 1 Side* (*G1S*).—One face shall be equal to that described under "Good 2 Sides" grade, while the opposite face shall be equal to the "Sound 2 Sides" grade described below.

12. *Sound 2 Sides* (*SO2S*).—Each face shall be of one or more pieces of firm smoothly cut veneer. When of more than one piece, it shall be well joined and reasonably matched for grain and color at the joints. It shall be free from knots, splits, checks, pitch pockets, and other open defects. Streaks, discolorations, sapwood, shims, and neatly made patches shall be admitted. This grade shall present a smooth surface suitable for painting.

13. *Wallboard* (*WB*).—This is a 3-ply board of ¼-inch or ⅜-inch sanded, or 5-ply ½-inch sanded thickness, made only in standard wallboard sizes, the face of which shall be of one or more pieces of firm, smoothly cut veneer. When of more than one piece, it shall be well joined and reasonably matched for grain and color at the joints. It shall be free from knots, splits, pitch pockets, and other open defects. Streaks, discolorations, sapwood, shims, and neatly made patches shall be admitted. The face on this grade shall present a smooth surface suitable for painting. The backs shall contain knotholes or pitch pockets, splits, and other defects in number and size that will not seriously affect the strength or serviceability of the panel and which cannot reasonably and economically be repaired to make a sound face. All wallboard panels shall be so designated by grade marking each panel.

14. *Sheathing* (*SH*).—This is an unsanded plywood made only in the following sizes: Thicknesses 5/16 inch and ⅜ inch 3 ply, ⅝ inch 3 or 5 ply; widths 32 and 48 inches; length 96 inches. One face shall present a solid surface except that the following will be permitted: (a) Not more than six knotholes ⅜ inch or less in greatest dimension; (b) splits 1/16 inch or less in width; and (c) one or two strips of paper tape.

There may be any number of patches and plugs in the face but the face may not be of such quality that, if sanded, it will pass for a wallboard face. No belt sanding is permissible. The back shall contain solid knots, knotholes or pitch pockets, splits, and/or other defects in number and size that will not seriously affect the strength

or serviceability of the panel. No tape shall be permitted in the glue line. All sheathing panels shall be scored or marked for nailing to conform to standard spacing of lumber studding.

15. *Automobile and industrial stock (rough).*—Faces of panels shall be free from knotholes. Tight knots, straight and tight checks shall be admitted. Pieced faces constitute no defect. Core and cross bands shall be of firm stock. Knotholes in cores and cross bands, up to 1¼ inches in diameter, are permitted.

16. *Concrete-form plywood.*—Concrete-form plywood shall be built up of three or five thicknesses of veneer, of which the two outside plies are at least ⅛ inch thick before sanding. An occasional knothole is permissible in the center or core of 5-ply panels only, but no knotholes are permitted in cross banding. Faces shall be free from knots or open defects. The bonding agent used shall be especially prepared for this purpose and be very highly water-resistant. All concrete form plywood shall be so designated by grade marking each panel. (When so ordered, concrete form plywood will be treated with a satisfactory form oil or other preparation.)

DOOR PANELS

17. *Number 1 door panel (No. 1 D. P.).*—The grade of No. 1 door panels shall be the same as for Good 2 Sides panels.

18. *Number 2 door panel (No. 2 D. P.).*—Each face shall be of a single piece of veneer that is free of knots and other open defects, but may admit medium stain and discoloration. Patches not exceeding ⅝ by 2½ inches and shims of any size, when reasonably selected for color and grain, are admissible.

MOISTURE-RESISTANCE REQUIREMENTS

19. Douglas fir plywood is made in either of two classes, namely, Moisture-Resistant (M. Res.) and Exterior (Ext.), the test requirements of which are set forth below.

20. *Moisture-Resistant (M. Res.).*—This class represents the majority of production and consists of plywood with a high degree of moisture resistance where its application requires that it shall retain its original form and practically all its strength when occasionally subjected to a thorough wetting and subsequent normal drying; a plywood suitable for construction where subjected to occasional deposits of moisture by condensation through walls or leakage or from other sources.

21. *Tests for Moisture-Resistant class.*—Five samples 6 by 6 inches shall be taken from each test panel. They shall be submerged in water at room temperature for a period of 4 hours, followed by drying at a temperature not to exceed 100° F for a period of 20 hours. This cycle shall be repeated a second time, after which the samples must show not more than 2 inches of delamination along the edge.

22. *Exterior (Ext.).*—This class represents the ultimate in moisture resistance, a plywood that will retain its original form and strength when repeatedly wetted and dried and otherwise subjected to the elements, and suitable for permanent exterior use.

23. *Tests for Exterior class.*—Five samples shall be cut as shown in figure 1 from each test piece. They shall be submerged in water at room temperature for a period of 48 hours and dried for 8 hours

at a temperature of 145° F (±5° F) and then followed by two cycles of soaking for 16 hours and drying for 8 hours under the conditions described above. The samples shall again be soaked for a period of 8 hours and tested while wet in a shear testing machine, as illustrated in figure 2, by placing them in the jaws of the device to which a load shall be applied at the rate of 600 to 1,000 pounds per minute until failure. The test specimens must show no less than 30 percent

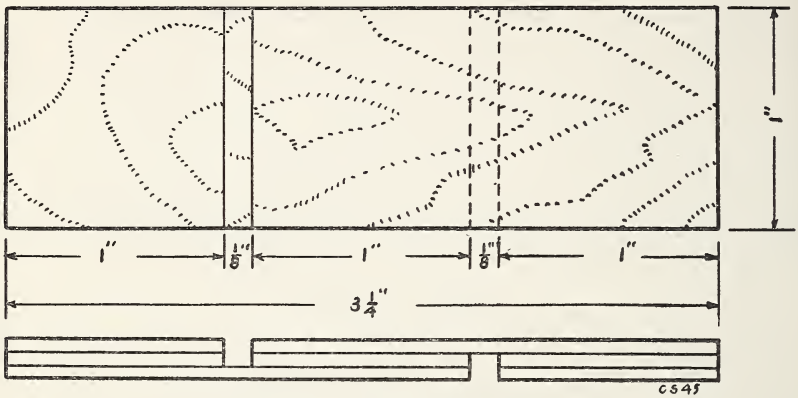

FIGURE 1.—*Test specimen.*

minimum and 60 percent average wood failure, and no delamination. If the number of plies exceeds 3, the cuts shall be made so as to test any two of the joints, but the additional plies need not be stripped except as demanded by the limitations of the width of the retaining jaws on the testing machines. When desired, special jaws may be constructed to accommodate the thicker plywood. If number of plies exceeds 3, the choice of joints to be tested shall be left to the

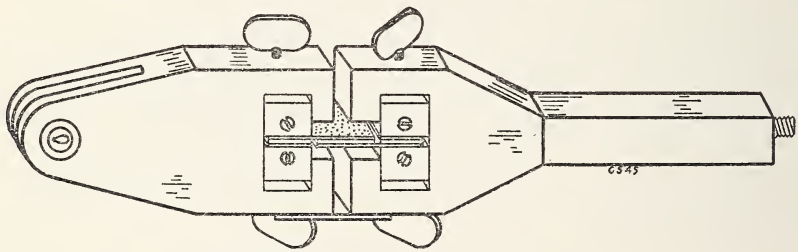

FIGURE 2.—*Jaws for shear test.*

discretion of the inspector, but at least one-half the tests shall include the innermost joints.

24. *Alternate test.*—An alternate test applicable at the manufacturer's option to the one above mentioned consists of taking the samples as described above and boiling them in water for 4 hours, followed by a drying of 20 hours at the above-mentioned temperature. They shall be boiled again for a period of 4 hours and the samples tested while wet, as above described. The test specimens must show no less than 30-percent minimum and 60-percent average wood failure, and no delamination.

25. *Sampling.*—Samples for testing shall be taken from 1 percent of the panels in any shipment, but not less than 5 and not more than 10 panels shall be selected. Test specimens shall be cut from the ends and the top and bottom of the panel at or near the middle and the edge; a fifth sample shall be taken from somewhere near the middle of the panel.

26. *Interpretation of tests.*—If there is failure of more than one test specimen from any panel, that specific panel shall be rejected. If there is a failure in any of the panels tested, five additional panels shall be selected and tested under the conditions described, and all of these five panels must pass the required test. If these panels do not pass such test, a reinspection may be demanded, either by buyer or seller, as provided in paragraphs 30 to 32.

STANDARD SIZES

27. Douglas fir plywood is made in the following standard sizes.

TABLE 1.—*Standard Douglas fir plywood sizes*

Item	Width		Length	Thickness
	Inches	*Inches*	*Inches*	*Inches* (After sanding)
Standard panels (G2S), (G1S), (SO2S)	12	26	48	3/16 (3 ply) 3/4 (5 ply)
	14	28	60	1/4 (3 ply) 13/16 (5 or 7 ply)
	16	30	72	5/16 (3 ply) 7/8 (7 ply)
	18	36	84	3/8 (3 ply) 15/16 (7 ply)
	20	42	96	7/16 (5 ply) 1 (7 ply)
	22	48	--	1/2 (5 ply) 1 1/16 (7 ply)
	24	--	--	9/16 (5 ply) 1 1/8 (7 ply)
				5/8 (5 ply) 1 3/16 (7 ply)
				11/16 (5 ply)
Wallboard	48		60	1/4 (3 ply sanded 2 sides)
			72	3/8 (3 ply sanded 2 sides)
			84	1/2 (5 ply sanded 2 sides)
			96	
Sheathing	32		96	5/16 (3 ply unsanded)
	48			3/8 (3 ply unsanded)
				5/8 (3 ply unsanded)
				5/8 (5 ply unsanded)
Automobile and industrial	As ordered		As ordered	1/2 (5 ply unsanded)
				9/16 (5 ply unsanded)
				5/8 (5 ply unsanded)
				11/16 (5 ply unsanded)
				3/4 (5 ply unsanded)
				7/8 (5 or 7 ply unsanded)
Concrete form panels	Same as standard panels		Same as standard panels	1/2 (3 or 5 ply sanded 2 sides)
				9/16 (5 ply sanded 2 sides)
				5/8 (5 ply sanded 2 sides)
				11/16 (5 ply sanded 2 sides)
				3/4 (5 ply sanded 2 sides)

SIZE TOLERANCES

28. A tolerance of 1/64 (0.0156) inch over or under the specified thickness shall be allowed on sanded panels and a tolerance of 1/32 (0.0312) inch on unsanded panels.

29. A tolerance of 1/32 (0.0312) inch over or under the specified length and/or width shall be allowed but all panels shall be square within 1/8 (0.1250) inch.

INSPECTION

30. All plywood guaranteed to conform to the commercial standard grading rules is sold subject to inspection in the white only, except concrete form material which may have a priming of oil or other preparation before shipment. All complaints regarding the quality of any shipment must be made within 15 days from receipt thereof.

31. Where the grade of any plywood shipment is in dispute and a reinspection is demanded, the cost of such reinspection shall be borne by the seller and the shipment settled for on the basis of the reinspection report if the shipment is more than 5 percent below grade.

32. If reinspection establishes the shipment to be 5 percent or less below grade, the buyer pays the cost of reinspection and pays for the shipment as invoiced.

GRADE MARKING AND CERTIFICATION

33. The following sets forth the grade marking and certification rules adopted by the Douglas Fir Plywood Association to preserve the high standards of quality herein recorded and to insure distributors and ultimate consumers receiving the proper kind of plywood for their specific needs:

34. All standard size panels shall be marked or branded with the letters "DFPA" (the initials of the Association) and the following descriptive names or symbols:

34 (*a*). All Standard Panels of Good 2 Sides, Good 1 Side, and Sound 2 Sides grades shall be branded or stamped on one edge with the name "PLYPANEL."

CERTIFICATE of INSPECTION

It is hereby certified that the plywood identified below was manufactured, in accordance with the grade specifications proposed by the DOUGLAS FIR PLYWOOD ASSOCIATION and established by the U. S. Department of Commerce as Commercial Standard CS45-38 by the

JOHN DOE PLYWOOD CO.

whose production is under the supervision of the Inspection Department of the DOUGLAS FIR PLYWOOD ASSOCIATION.

Signed for DOUGLAS FIR PLYWOOD ASSN.

Order No.----------

Car No.----------

Date----------

Managing Director

Authorized Signatory

DOUGLAS FIR PLYWOOD ASSOCIATION CORPORATE SEAL TACOMA, WASH.

Subscribed and declared to before me, the undersigned, a Notary Public in and for the state of----------

by the above named authorized signatory personally known to me as the person signing the above certificate.

----------*Notary Public*

Dated----------*19*----

FIGURE 3.—*Inspection certificate of the Douglas Fir Plywood Association.*

34 (*b*). All *Wallboard* panels shall be stamped or branded on the back with the name "PLYWALL, Genuine Douglas Fir Plywood Wallboard, Inspected."

34 (*c*). All *Sheathing* shall be scored in parallel lines at 16-inch intervals across the face, with the name "PLYSCORD" repeated at frequent intervals, and shall also be stamped "M. Res." and with the words "Genuine Plyscord Sheathing, Inspected."

34 (*d*). All *Concrete form panels* shall be stamped on the face with an appropriate stamp, containing the name "PLYFORM," and the words "Genuine Concrete Form Panel, Inspected."

34 (*e*). All *Exterior plywood* shall be branded or stamped "EXT." on the edge.

35. The Douglas Fir Plywood Association maintains an Inspection Bureau for the careful grading of its members' products. By the use of certificates on carload lots, facsimile of which appears in figure 3, the first unloading buyer of a carload is assured of receiving plywood of the grade specified. This is of special value to buyers of industrial grade, which, because of frequent odd sizes, cannot be grade marked separately.

GLOSSARY OF TERMS

Centers.—See *Cores.*

Checks.—Small splits running parallel to the grain of the wood caused chiefly by strains produced in seasoning.

Cores.—Cores or centers are the innermost layer in plywood construction.

Crossbanding.—Veneer used in the construction of plywood with 5 or more plies. In 5-ply construction it is placed at right angles between the cores and faces.

Defects, open.—Checks, splits, open joints, cracks, loose knots, and other defects interrupting the smooth continuity of the panel surface.

Heartwood.—Sometimes referred to as "heart"—the darker-colored wood occurring in the inner portion of the tree.

Knots.—Cross section of a branch or limb whose grain usually runs at right angles to that of the piece in which it is found.

Knotholes.—Voids produced by the dropping of knots from the wood in which they were originally embedded.

Lap.—A condition where the veneers used are so misplaced that one piece overlaps the other rather than making a smooth butt joint.

Patches.—Insertions of sound wood glued and placed into panels from which defective portions have been removed.

Pitch pockets.—A pitch pocket is a well-defined opening between rings of annual growth, usually containing, or which has contained, more or less pitch, either solid or liquid.

Pitch streaks.—A pitch streak is a well-defined accumulation of pitch in a more or less regular streak.

Sapwood.—Sometimes referred to as "sap"—the lighter-colored wood occurring in the outer portion of the tree.

Shim.—A long, narrow patch not more than $\frac{3}{16}$ inch wide.

Streaks.—See *Pitch streaks.*

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METHOD OF ORDERING

The established procedure in specifying size and grade of plywood is to name the number of plies, width, length, grade, moisture resistance, finished thickness, and whether sanded or unsanded.

Width always refers to distance across the grain of the face plies; length refers to the distance along the grain. Width should always be specified first.

If, for example, you require 100 pieces of plywood ¼ inch thick, 48 inches wide, and 72 inches long, for interior or semiexposed conditions, one side of which is to be nailed against a wall where it will not show, but the other side is to be exposed to view and finished in a light stain or natural finish, this material should be ordered as follows:

> 100 pcs., 3-ply, 48″×72″, Good 1 Side, Moisture-Resistant, Sanded 2 Sides to ¼″.

For most uses sanded panels are desirable, but there are occasional uses where unsanded panels, of a "Sound" or other grade, are satisfactory. Such panels should be specified, unsanded.

For certain types of service, special features are desirable in plywood panels, such as oiling and special bonding for concrete forms; extra-thick faces for certain architectural treatments, etc. In such cases, the special treatment or feature should be stated after the standard specification. For example, a "Standard Sound 2 Sides" panel of ⅜ inch thickness is desired for permanent exterior use to be manufactured with special adhesive. The order should read:

> 100 pcs., 3-ply, 48″×96″, Sound 2 Sides, Exterior, Sanded 2 Sides to ⅜″. (Add further special requirements.)

GRADE USE CLASSIFICATION FOR DOUGLAS FIR PLYWOOD

The following chart is offered by the Douglas Fir Plywood Association, as a rough guide to the grades generally suitable to the various uses listed. Where the material is to be exposed to the weather, plywood of "Exterior" class should be specified.

Use	Grades						Automobile industrial stock
	Good 2 sides	Good 1 side	Sound 2 sides	Wallboard	Concrete form panels	Sheathing	
Amusement-park devices			×	×			
Archways		×		×			
Auto-body parts			×				×
Auto trailers	×		×				×
Base molding		×		×			
Benches			×				
Billboards			×				
Bins			×	×			
Birdhouses					×		
Boats	×	×	×				
Bookcases		×	×				
Boxes, trays, etc		×	×				
Breakfast nooks		×	×	×			
Bulletin boards				×			

Use	Grades						Automobile industrial stock
	Good 2 sides	Good 1 side	Sound 2 sides	Wallboard	Concrete form panels	Sheathing	
Cabinets:							
General		×	×				
Ice cream		×	×				
Kitchen		×	×				
Medicine		×	×				
Ceilings				×			
Chests			×				
Church pews	×		×				
Closets				×			
Clothes chutes				×			
Concrete forms					×		
Counter fronts		×					
Desks		×					
Display racks	×		×				
Drawers and drawer bottoms			×				
Farm buildings			×	×	×	×	
Fixtures, store	×	×	×				
Flooring		×		×			
Flower boxes			×		×		
Furniture	×	×	×				
Garages			×	×	×	×	
Houses, play					×		
Ironing boards		×	×				
Lockers			×				
Manual training uses	×	×	×	×	×		
Mirror backs				×			
Paneling		×		×			
Partitions	×		×				
Picnic tables			×	×			
Radio cabinets							×
Refrigerators			×				×
Screens (folding)	×		×				
Sheathing				×		×	
Shelving			×	×			
Siding			×				
Signs		×	×				
Subflooring						×	
Sunroom, porch				×			
Table tops		×		×			
Toys		×	×				
Trailers			×	×			
Trench sheeting					×		
Trunks			×				
Wardrobes			×				
Walls		×		×			
Window displays	×						
Window seats		×					
Window valances	×						
Work benches			×	×			

EFFECTIVE DATE

The standard became effective for new production on November 10, 1938.

STANDING COMMITTEE

The following comprises 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 association 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.

Philip Garland (chairman), Oregon Washington Plywood Co., 1549 Dock St., Tacoma, Wash.
Craig Spencer, Elliott Bay Mill Co., 600 W. Spokane St., Seattle, Wash.
Norman O. Cruver, The Wheeler Osgood Sales Corporation, Tacoma, Wash.
Nelson S. Perkins, Douglas Fir Plywood Assn., Tacoma, Wash.
Charles W. Jacob, John Bader Lumber Co., 2020 Clybourne Avenue, Chicago, Ill.
Walter Junge, engineering section, Technical Division, Federal Housing Administration, Washington, D. C.

HISTORY OF PROJECT

Pursuant to a request from the manufacturers of Douglas fir plywood a general conference of manufacturers, distributors, and users of the product was held at the Winthrop Hotel, Tacoma, Wash., on August 17, 1932, to consider the adoption of standard grading rules for the guidance of the industry.

Manufacturers representing approximately 80 percent of the production of Douglas fir plywood were in attendance as well as others interested in the distribution and use of the product.

The proposed standard that had been tentatively drafted by a committee of manufacturers was thoroughly discussed and several constructive changes were made.

Following written acceptance by a satisfactory majority the standard was promulgated as CS45–33, effective February 15, 1933.

First revision.—The standing committee as a result of an industry conference held in Tacoma, Wash., on August 3, 1936, recommended some modifications and further urged their publication as a separate document from the standard covering export grades.

The recommended revision was circulated on September 11, 1936, for written acceptance with the result that the revised standard was accepted and authorized by the industry for publication as Douglas Fir Plywood (Domestic Grades), (Second Edition), Commercial Standard CS45–36, effective November 1, 1936.

Second revision.—Agreeable to a suggestion from the Federal Housing Administration and following several conferences between representatives of the Forest Products Laboratory, the F. H. A., and the plywood manufacturers, a second revision so as to provide for two classes of moisture resistance and changes in the sheathing grade was proposed. On approval by the standing committee this revision was circulated September 16, 1938, for acceptance. Following acceptance by a satisfactory majority, the success of the revision was announced on October 25, 1938, and the standard became effective for new production on November 10, 1938, as CS45–38.

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 CS45–38 as our standard of practice in the

Production [1] Distribution [1] Use [1]

of Douglas fir plywood (domestic grades).

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_____

Company_____
(Fill in exactly as it should be listed in pamphlet)

Street address_____

City and State_____

[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 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 United States 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

The organizations and individuals listed below have accepted these grading rules as their standard of practice in the production, distribution, and use of Douglas fir plywood for the domestic trade. 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 to conform with the requirements of this standard. Therefore, specific evidence of quality certification should be obtained where desired.

ASSOCIATIONS

American Association of Engineers, Chicago, Ill. (In principle.)
Associated General Contractors of America, Inc., The, Washington, D. C.
Associated General Contractors of America, Inc., the Baltimore Builders' Chapter of the, Baltimore, Md.
Carolina Lumber & Building Supply Association, Charlotte, N. C. (In principle.)
Douglas Fir Plywood Association, Tacoma, Wash. (In principle.)
Michigan Retail Lumber Dealers Association, Lansing, Mich.
Mountain States Lumber Dealers Association, Denver, Colo. (In principle.)
National Lumber Manufacturers Association, Washington, D. C.
National Oak Flooring Manufacturers Association, Memphis, Tenn. (In principle.)
New York Lumber Trade Association, Inc., New York, N. Y.
North West Woodwork Association, St. Paul, Minn. (In principle.)
San Antonio Builders' Exchange, San Antonio, Tex. (In principle.)
Structural Service Bureau, Philadelphia, Pa.
Tennessee Lumber, Millwork & Supply Dealers' Association, Johnson City, Tenn. (In principle.)
Western Retail Lumbermen's Association, Spokane, Wash. (In principle.)
Wisconsin Retail Lumbermen's Association, Milwaukee, Wis.

FIRMS

Aberdeen Plywood Co., Aberdeen, Wash.
Acme Store & Office Fixture Co., Los Angeles, Calif.
Adams, Franklin O., Tampa, Fla.
Adler Manufacturing Co., Louisville, Ky.
Aetna Cabinet Co., Indianapolis, Ind.
Allen, Harris C., San Francisco, Calif.
Allen & Son, George W., La Porte, Ind. (In principle.)
Altfillisch, Charles, Decorah, Iowa.
American Builders, Seattle, Wash.
American Door & Manufacturing Co., Hoquiam, Wash.
American Houses, Inc., New York, N. Y.
American Lumberman, Chicago, Ill., and Seattle, Wash. (In principle.)
American Plywood Corporation, New London, Wis.
Ammann-Goertz Co., Inc., New York, N. Y.
Anderson Lumber Co., Ogden, Utah.
Andrews Co., The A. H., Chicago, Ill.
Andrews, Jones, Biscoe & Whitmore, Boston, Mass.
Arizona Sash, Door & Glass Co., Phoenix, Ariz.
Armstrong-Walker Lumber Co., Terre Haute, Ind.
Arrington & Co., Inc., W. C., Norfolk, Va.
Auler, Jensen & Brown, Oshkosh, Wis.
Ayers Co., Inc., Alfred B., Newark, N. J.
Bader Lumber Co., John, Chicago, Ill.
Balch & Lippert, Madison, Wis.
Baltimore Enamel & Novelty Co., The, Baltimore, Md. (In principle.)
Barnes Lumber Co., W. F. & J. F., Waco, Tex.
Bartlett & Co., Inc., Binghamton, N. Y.
Bastow, Abram, New York, N. Y.
Baumer, Herbert, Columbus, Ohio.
Beeson, Carroll O., Crawfordsville, Ind.
Bennett Bailey Lumber Co., Minneapolis, Minn.
Binswanger & Co., Inc., Richmond, Va.
Bishop, Horatio W., Los Angeles, Calif.
Blanchard Lumber Co., New York, N.Y.
Blithe, Wesley Lesher, Philadelphia, Pa.
Bogner, Harry, Milwaukee, Wis. (In principle.)

Borden, Guiney & Kendall Co., Fall River, Mass.
Bosman & Casson, Inc., Harrison, N. J.
Botsford Lumber Co., Winona, Minn.
Boyd Lumber & Mill Co., Santa Barbara, Calif.
Brazer, Clarence W., New York, N. Y.
Brereton, Bernard, Seattle, Wash. (In principle.)
Brill Co., J. G., Philadelphia, Pa.
Brown, Floyd W., Minneapolis, Minn. (In principle.)
Brown, W. J., Cedar Rapids, Iowa. (In principle.)
Brown-Graves Co., Akron, Ohio.
Brown, Wheelock, Harris, Stevens, Inc., New York, N. Y.
Bruett Lumber, Inc., T. A., Milwaukee, Wis.
Brust, Peter, Milwaukee, Wis.
Buechner & Orth, St. Paul, Minn. (In principle.)
Buffalo Plywood Corporation, Buffalo, N. Y.
Buffalo Wire Works Co., Buffalo, N. Y. (In principle.)
Buffelen Lumber & Manufacturing Co., Tacoma, Wash.
Building Service, Inc., Great Falls, Mont.
Burnham & Hammond, Inc., Chicago, Ill. (In principle.)
Byron Sash & Door Co., Louisville, Ky.
California Panel & Veneer Co., Los Angeles, Calif.
Cameron & Co., Inc., Wm., Waco, Tex.
Camp Plywood Co., Inc., The E. W., Indianapolis, Ind.
Campbell & Summerhayes, Inc., Louisville, Ky.
Candela, Rosario, New York, N. Y.
Carder, Macon O., Amarillo, Tex.
Carey, Lombard, Young & Co., Oklahoma City, Okla.
Carlander, Guy A., Amarillo, Tex.
Carolina Builders Corporation, Raleigh, N. C.
Carpenter, Charles A., Rochester, N. Y.
Carroll Lumber Co., Inc., The, Alexandria, La.
Central Panel & Supply Co., The, Cincinnati, Ohio.
Certain Lumber Co., W. N., Neodesha, Kans.
Chapin, Rollin C., Minneapolis, Minn. (In principle.)
Chapin Lumber Co., The, Aurora, Colo.
Chesebro-Whitman Co., Inc., Long Island City, N. Y.
Chicago & Riverdale Lumber Co., Chicago, Ill.
Chicago Trim & Plywood Co., Chicago, Ill.
Child, Harry Charles, Sayre, Pa.
Clark County Lumber Co., The, Springfield, Ohio.
Clear Fir Lumber Co., Tacoma, Wash.
Cleveland Window Glass & Door Co., The, Cleveland, Ohio.
Coates-Hoppe Lumber Co., North Platte, Nebr.
Coit, Elisabeth, New York, N. Y. (In principle.)
Collier-Adams Manufacturing Co., St. Joseph, Mo.
Columbia Valley Lumber Co., Bellingham, Wash.
Combs Lumber Co., Inc., Lexington, Ky.
Conrad & Cummings, Binghamton, N. Y.
Coolbaugh & Son Co., C. C., Gloucester City, N. J.
Coolerator Co., The, Duluth, Minn.
Corddry Co., The, Snow Hill, Md.
Corduan Manufacturing Co., Inc., Chicago, Ill.
Corunna Manufacturing Co., Corunna, Mich.
Cottonwood Lumber Co., Cottonwood, Ariz.
Cram & Ferguson, Boston, Mass.
Crane Co., The Arthur D., Lake Mohawk, Sparta, N. J.
Crompton & Knowles Loom Works, Worcester, Mass.
Cronin, John, Boston, 24, Mass. (In principle.)
Cross, Austin & Ireland Lumber Co., Brooklyn, N. Y.
Crowell & Lancaster, Bangor, Maine.
Crumb-Colton Co., Rockford, Ill.
Cumberland Sash & Door Co., Cumberland, Md.
Curtis Companies, Inc., Clinton Division, Clinton, Iowa.
Curtiss & Son, Wm. P., Richland, N. Y.
Cuthbert & Cuthbert, Ann Arbor, Mich.
Daniel, Jr., J. E., Malvern, Ark.
D'Arcy Co., Dover, N. H.
Davis Hardwood Co., San Francisco, Calif.
Davis Lumber Co., Schenectady, N. Y.
Davis Plywood Corporation, The, Cleveland, Ohio.
De Jarnette, Charles W., Des Moines, Iowa.
Denver Reserve Supply Co., Denver, Colo.
Derr Co., Wm. H., Philadelphia, Pa. (In principle.)
Detroit Store Fixture Co., Detroit, Mich.
Dibble Lumber Co., The S. B., North Adams, Mass.
Dickerson Lumber Co., Huntington, W. Va.
Dietel, George J., Buffalo, N. Y.
Dietel & Wade, Buffalo, N. Y.
Dillon, John Robert, and Lewis, E. S., Atlanta, Ga.
Disbrow & Co., Omaha, Nebr.
Dix Lumber Co., N. Cambridge, Mass.
Dodge & Morrison, New York, N. Y.

Dower Lumber Co., John, Tacoma, Wash.
Dykes Lumber Co., New York, N. Y.
Edwards Co., Inc., The O. M., Syracuse, N. Y. (In principle.)
Edwards Manufacturing Co., The, Cincinnati, Ohio.
Eiler Lumber Co., Edward, Pittsburgh, Pa. (In principle.)
Elliott Bay Lumber Co., Seattle, Wash.
Elliott Bay Mill Co., Seattle, Wash.
Emery, Henry C., Nyack, Rockland County, N. Y. (In principle.)
Emery Industries, Inc., Cincinnati, Ohio.
Emmons-Hawkins Hardware Co., Huntington, W. Va.
English, Harold T., Hutchinson, Kans.
Eschweiler & Eschweiler, Milwaukee, Wis.
Evans & Callaway, Fowler, Ind.
Evansville Sash & Door Co., Evansville, Ind.
Evers, Albert J., San Francisco, Calif.
Exchange Lumber Co., Inc., Rochester, N. Y.
Exchange Lumber & Manufacturing Co., Spokane, Wash.
Farley & Loetscher Manufacturing Co., Dubuque, Iowa. (In principle.)
Ferguson Bros. Manufacturing Co., Hoboken, N. J.
Fessenden Hall, Philadelphia, Pa.
Fink & Schindler Co., The, San Francisco, Calif.
Flannagan, Eric G., Henderson, N. C. (In principle.)
Foltz & Son, Herbert, Indianapolis, Ind.
Foster Lumber Co., R. S., Indianapolis, Ind.
Foxworth-McCalla Lumber Co., Phoenix, Ariz.
Frazier & Raftery, Chicago, Ill. (In principle.)
Frey Planing Mill Co., The, Louisville, Ky.
Friend & Terry Lumber Co., Sacramento, Calif.
Fry Fulton Lumber Co., St. Louis, Mo.
Fuller, Robert K., Denver, Colo.
Fuller & Co., W. P., Boise, Idaho.
Fuller & Co., W. P., Portland, Oreg.
Gaines, Henry Irven, Asheville, N. C.
Geissler, Charles C., Philadelphia, Pa.
General Fireproofing Co., The, Youngstown, Ohio.
General Millwork Corporation, Utica, N. Y.
General Motors Corporation, Buick Motor Division, Flint, Mich.
General Paint Corporation, Spokane, Wash.
Georgia Show Case Co., Montgomery, Ala.
Gibbs Lumber Co., Anaheim, Calif.
Gilchrist, Edmund B., Philadelphia, Pa.
Gordon Van Tine Co., Davenport, Iowa.
Goshen Veneer Co., Goshen, Ind. (In principle.)
Grand Rapids Store Equipment Co., Grand Rapids, Mich.
Gray Corporation, Peter, Cambridge, Mass.
Great Lakes Sash & Door Co., The, Cleveland, Ohio.
Grogan Robinson Lumber Co., Great Falls, Mont.
Gutterson, Henry H., San Francisco, Calif.
Hager & Cove Lumber Co., Lansing, Mich.
Hahn, Stanley Worth, Muskegon, Mich. (In principle.)
Haley Bros., Santa Monica, Calif.
Hall-Gregg, Inc., Somerville, Mass.
Hallack & Howard Lumber Co., The, Denver, Colo.
Hallberg & Beersman, Chicago, Ill.
Halsey Lumber Mills, Charleston, S. C.
Harbor Plywood Corporation, Hoquiam, Wash., and Chicago, Ill.
Hardin Sash & Door Co., H. H., Fort Worth, Tex.
Harper & West, Boston, Mass.
Hartung & Hansen, Inc., Seattle, Wash.
Hasness, C. D., Harrisburg, Pa.
Hawkins Lumber & Warehouse Co., Boston, Mass.
Helfensteller, Hirsch & Watson, St. Louis, Mo.
Helfrich & Sons, Inc., Geo., Baltimore, Md.
Heller & Co., The W. C., Montpelier, Ohio. (In principle.)
Henrich Panel Co., Inc., Buffalo, N. Y.
Henshaw Refrigeration & Fixture Co., San Francisco, Calif.
Herbst & Kuenzli, Milwaukee, Wis.
Heyer Sons, W. H., Sumner, Iowa.
Higgins, Charles H., New York, N. Y.
Higgins Lumber Co., J. E., San Francisco, Calif.
Hinckley Lumber Co., The Dwight, Cincinnati, Ohio.
Hinckley & Son Co., John, Yarmouthport & Hyannis, Mass.
Hodgdon & Son, Charles, Chicago, Ill.
Hoffman Lumber Co., Pittsburgh, Pa.
Holsman & Holsman, Chicago, Ill.
Hope, Jr., Frank L., San Diego, Calif.
Hopkins, Albert Hart, Buffalo, N. Y.
Houston Lumber Co., The A. C., Wichita, Kans.
Houston Show Case & Manufacturing Co., Houston, Tex.
Huck Manufacturing Co., Quincy, Ill.
Hudson, Jr., Flynn E., Auburn, Ala.
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Jamme, Bernard E., Summit, N. J.
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Johnson, Wallwork & Dukehart, Portland, Oreg.
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Jones & Marsh, Portland, Oreg.
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Koch Butchers Supply Co., North Kansas City, Mo.
Koehl & Son, Inc., John W., Los Angeles, Calif.
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Kullberg Manufacturing Co., Minneapolis, Minn.
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Lake Washington Shipyards, Houghton, Wash.
Lambert Lumber Co., Leavenworth, Kans.
Larrick, Tom, Lawrence, Kans.
Lawrence, Holford & Allyn, Portland, Oreg.
Leidigh & Havens Lumber Co., Salina, Kans.
Levine, Ernest, Highland Park, N. J.
Levy, Will, St. Louis, Mo.
Lewis Lumber Co., Spring Lake, N. J.
Liberty Lumber & Manufacturing Co., Inc., Erwin, Tenn.
Lloyd & Son, Ltd., C., Wingham, Ontario, Canada.
Loeb, Laurence M., White Plains, N. Y.
Loetscher & Burch Manufacturing Co., Des Moines, Iowa.
Logan Lumber Co., Tarentum, Pa.
Luhring Lumber Co., Inc., Evansville, Ind.
Long-Bell Lumber Co., The, Kansas City, Mo., and Longview, Wash.
Lumber Dealers Supply Co., Denver, Colo.
Lumber & Millwork Co. of Philadelphia, The, Philadelphia, Pa.
Lumbermen's Door & Trim Co., The, Cleveland, Ohio.
Lumbermen's Millwork & Supply Co., Ardmore, Okla.
Lumbermen's Reserve Supply Co., Des Moines, Iowa.
Lyman-Hawkins Lumber Co., The, Akron, Ohio.
M. & M. Wood Working Co., Portland, Oreg.
MacConnell, Inc., Malcolm, St. Louis, Mo.
Mahlstedt Materials, Inc., New Rochelle, N. Y.
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Maris Plywood Corporation, San Francisco, Calif.
Marsh & Truman Lumber Co., Chicago, Ill.
Marshall-Wright Lumber Co., Inc., Ionia, Mich.
Martin, Edgar, Chicago, Ill.
Martin, Raymond J., New York, N. Y.
Mason & Co., George D., Detroit, Mich.
Mason Lumber Co., Jacksonville, Fla.
Matot, D. A., Chicago, Ill.
Mauran, Russell, Crowell & Mullgardt, St. Louis, Mo.
McCann-Erickson, Inc., Seattle, Wash.
McCormick-Hannah Lumber Co., Eustis, Fla.
McGoldrick Lumber Co., Spokane, Wash.
McMillen Co., The R., Oshkosh, Wis.
Memphis Sash & Door Co., Memphis, Tenn.
Meyers, Henry H., Alameda, Calif.
Michigan Wholesalers, Inc., Jackson, Mich.
Mid-West Lumber Co., The, Mankato, Kans.
Midwest Lumber Co., Dubuque, Iowa.
Miles Lumber & Coal Co., A. W., Livingston, Mont.
Miller Bros., Inc., Lebanon, Pa.
Miller & Yeager, Terre Haute, Ind.
Modern Woodwork Co., Milwaukee, Wis.
Moline Furniture Works, Moline, Ill.
Molther, F. R., Ancon, C. Z. (In principle.)
Monahan & Meikle, Pawtucket, R. I.
Montgomery & Patteson, Charleston, W. Va.
Moore & Co., Dallas, Tex.
Moore Co., M. A., Le Mars, Iowa.
Moore Dry Dock Co., Oakland, Calif.
Moore-Handley Hardware Co., Birmingham, Ala.
Moore Lumber Co., L. A., Mason City, Iowa.
Mooser, William, San Francisco, Calif.
Morgan Millwork Co., Baltimore, Md.

Morrison, Karl E., Erie, Pa. (In principle.)
Morrison-Merrill & Co., Salt Lake City, Utah.
Mueller, Fred G., & Hair, W. R., Hamilton, Ohio.
Mutschler Bros. Co., Nappanee, Ind.
Nashville Sash & Door Co., Nashville, Tenn.
Nassau Suffolk Lumber and Supply Corporation, Amityville, Long Island, N. Y.
National Plywood Co., Inc., New York, N. Y.
National Wood Works, Sioux City, Iowa.
Neal-Blun Co., Savannah, Ga.
New England Box Co., The, Greenfield, Mass.
Newburgh Lumber Co., The, Newburgh, N. Y.
Newton Lumber Co., The, Pueblo, Colo.
Nicolai Door Sales Co., San Francisco, Calif.
Northern Lumber Co., Billings, Mont.
Northwest Door Co., Tacoma, Wash.
Norton & Son, F. S., Algona, Iowa.
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Nurenburg, W. S., Fort Worth, Tex.
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Omaha Fixture & Supply Co., Omaha, Nebr.
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Omaha Hardwood Lumber Co., Omaha, Nebr.
Oregon, State of, Salem, Oreg.
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Pacific Mutual Door Co., Tacoma, Wash.
Pacific System Homes, Inc., Vernon, Calif.
Paine Lumber Co., Ltd., Oshkosh, Wis.
Pariseau Freres Limitee, Outremont, Quebec, Canada.
Parmelee, M. E., Knoxville, Tenn. (In principle.)
Parmentier Plywood Service, Philadelphia, Pa.
Parrish & Co., C. A., Spencer, W. Va.
Passaic-Bergen Lumber Co., Inc., Clifton, N. J.
Patten-Blinn Lumber Co., Los Angeles, Calif.
Patton Lumber Co., Ashland, Ky.
Paxton Lumber Co., Frank, Kansas City, Kans., and Denver, Colo.
Pease Woodwork Co., Inc., Cincinnati, Ohio.
Peerless Built-In Fixture Co., Berkeley, Calif.
Pehrson, G. A., Spokane, Wash.
Pennsylvania State College, The, Department of Forestry, State College, Pa. (In principle.)
Perry Lumber Co., Bartley, Nebr.
Philco Radio & Television Corporation, Philadelphia, Pa.
Plack, W. L., Philadelphia, Pa.
Platt & Bro., F. P., New York, N. Y. (In principle.)
Portsmouth Lumber Corporation, Portsmouth, Va.
Powe Lumber Co., Thomas E., St. Louis, Mo.
Proctor & Bowie Co., Winslow, Maine.
Proudfoot Rawson—Brooks & Borg, Des Moines, Iowa.
Queen City Sash & Door Co., The, Cincinnati, Ohio.
Queensborough Lumber Co., Inc., Bayside, N. Y.
Queensland, Sub-Department of Forestry, Brisbane, Queensland, Australia. (In principle.)
Ream Co., George E., Los Angeles, Calif.
Red River Lumber Co., The, Los Angeles, Calif.
Reeb Millwork Co., Roselle, N. J.
Reid, Jr., William H., Billings, Mont.
Renuart Lumber Yards, Inc., Coral Gables, Fla.
Richardson-Phelps Lumber Co., Grinnell, Iowa.
Rindge & Rindge, Grand Rapids, Mich. (In principle.)
Risser Lumber Co., Art, Paris, Ill.
Ritchie, James H., Boston, Mass.
Roberts Corporation, U. N., Davenport, Iowa.
Robinson Manufacturing Co., Everett, Wash.
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Roddis Co., Chicago, Ill.
Roddis Lumber & Veneer Co., Kansas City, Mo.
Rogers Lumber Co., The T. H., Oklahoma City, Okla.
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Royal Oak Wholesale Co., Royal Oak, Mich.
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Saginaw Lumber Co., The, Saginaw, Mich.
St. Louis, Board of Education of the City of, St. Louis, Mo.
Sarvis, Lewis J., Battle Creek, Mich.
Sash, Door & Glass Corporation, Richmond, Va.
Sawyer Woodworking Co., Joliet, Ill.
Scamell, Ralph E., Topeka, Kans.
Schiefer & Sons, San Diego, Calif.
Schoeppe, Edward, Philadelphia, Pa.

Schroeder Lumber & Supply Co., John, Milwaukee, Wis.
Schulzke, William H., Moline, Ill.
Schwarzwaelder & Co., Inc., Wm., Chichester, N. Y.
Seaburg Manufacturing Co., Jamestown, N. Y.
Searle & Chapin Lumber Co., Lincoln, Nebr.
Sears, Roebuck & Co., Chicago, Ill.
Segelke & Kohlhaus Co., La Crosse, Wis.
Seymour Commercial Co., The, Seymour, Conn.
Shepherd Lumber Corporation, John C., Charlotte, N. C. (In principle.)
Sherrill-Russell Lumber Co., Paducah, Ky.
Shire, Edward I., New York, N. Y. (In principle.)
Simons, Inc., Minneapolis, Minn.
Simons Lumber Co., Henry, Minneapolis, Minn.
Sitterding, Carneal, Davis Co., Inc., Richmond, Va.
Sizer & Co., Tacoma, Wash. (In principle.)
Sleeper, Harold R., New York, N. Y.
Smith Co., The Allen A., Toledo, Ohio.
Smith, Hinchman & Grylls, Detroit, Mich.
Smith & Sons, J. E., Philadelphia, Pa.
Smith Wood Products, Inc., Portland, Oreg.
Solie Lumber Co., Janesville, Wis.
Sones Lumber Co., El Centro, Calif.
Sothman Co., The, Grand Island, Nebr.
Southwestern Sash & Door Co., Albuquerque, N. Mex.
Southwestern Sash & Door Co., Joplin, Mo.
Sowers-Benbow Lumber Co., The, Columbus, Ohio.
Spahn & Rose Lumber Co., Dubuque, Iowa.
Sparks-Withington Co., The, Radio Division, Jackson, Mich.
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Standard Lumber Co., The, Ironton, Ohio.
Standard Lumber Co., Spokane, Wash.
Steele & Hibbard Lumber Co., St. Louis, Mo.
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Stockton Lumber Co., Inc., Stockton, Calif.
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Stopper, Eugene A., Philadelphia, Pa.
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Sweet's Catalog Service, New York, N. Y. (In principle.)
Syracuse University, Syracuse, N. Y.
Taylor, Ellery K., Philadelphia Pa.
Taylor, Henry L., St. Petersburg, Fla.
Taylor, Edward Gray & Ellis Wing, Los Angeles, Calif.
Teachout Co., The, Cleveland, Ohio.
Texas Technological College, Department of Architecture and Allied Arts, Lubbock, Tex. (In principle.)
Thomas, Arthur E., Dallas, Tex.
Thorne, Henry Calder, Ithaca, N. Y.
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Tolles-Bickford Lumber Co., Inc., Nashua, N. H.
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United American Bosch Corporation, Springfield, Mass. (In principle.)
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United States Plywood Corporation, Aircraft Plywood Division, Seattle, Wash.
Valentine, Charles W., Milwaukee, Wis.
Valley City Desk Co., Grand Rapids, Mich.
Van Arsdale, Harris Lumber Co., Inc., San Francisco, Calif.
Van Bergen, John S., Highland Park, Ill.
Vancouver Plywood & Veneer Co., Vancouver, Wash.
Vickere Lumber Co., T. W., Sheridan, Wyo.
Virginia Polytechnic Institute, Blacksburg, Va.
Vogel, Willis A., Toledo, Ohio.
Von Tobel Lumber Co., Ed., Las Vegas, Nev.
Voorhees, Gmelin & Walker, New York, N. Y.
Wachter, Harry W., & Horace W., Toledo, Ohio. (In principle.)
Waetjen & Co., Geo. L., Milwaukee, Wis.
Walker Lumber Co., Birmingham, Ala.
Walsh, Louis A., Waterbury, Conn.
Wanke Panel Co., Portland, Oreg.

Waples-Painter Co., Gainesville, Tex.
Warren Brothers Co., Nashville, Tenn.
Warren Lumber Co., The, Fort Morgan, Colo.
Washington Door Co., Tacoma, Wash.
Washington Veneer Co., Olympia, Wash.
Watertown Sash & Door Co., Watertown, S. Dak.
Weaver, Rudolph, Gainesville, Fla.
Weimer & Sons, George, St. Albans, W. Va.
Weinberg, Jos. L., Cleveland, Ohio. (In principle.)
Welch, Carroll E., Huntington, N. Y.
West Coast Plywood Co., Aberdeen, Wash.
West Frankfort Lumber Co., West Frankfort, Ill.
Western Electric Co., Inc., New York, N. Y.
Western Hardwood Lumber Co., Los Angeles, Calif.
Western Red Cedar Lumber, Seattle, Wash. (In principle.)
Wheeler Osgood Sales Corporation, Tacoma, Wash.
Whissel Lumber Co., Inc., L. N., Buffalo, N. Y.
White Bros., Oakland, Calif., and San Francisco, Calif.
Whitmer-Jackson Co., The, Cleveland, Ohio, and Buffalo, N. Y.
Whittier Lumber & Millwork Co., Newark, N. J.
Wiard Plow Co., Batavia, N. Y. (In principle.)
Wilbur Lumber Co., Waukesha, Wis.
Wiles-Chipman Lumber Co., St. Louis, Mo.
Willatsen, Andrew, Seattle, Wash.
Williams, Walter Thomas, New York, N. Y.
Willson, Fred F., Bozeman, Mont.
Wischmeyer, William F., St. Louis, Mo.
Wisconsin, University of, Madison, Wis.
Wohlsen Co., The, Lancaster, Pa.
Woltersdorf, Arthur, Chicago, Ill. (In principle.)
Wood Lumber Co., Birmingham, Ala.
Wood Lumber Co., E. K., Los Angeles, Calif.
Wood Products, Chicago, Ill. (In principle.)
Wood & Son, Associates, Edward J., Clarksburg, W. Va.
Woodbridge Lumber Co., Woodbridge, N. J.
Wright & Rogvoy, Detroit, Mich. (In principle.)
X. L. Refrigerating Co., Inc., The, Chicago, Ill.
Young, A. M., Seattle, Wash.
Zenith Radio Corporation, Chicago, Ill.
Zoller & Muller, New York, N. Y.

U. S. GOVERNMENT

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War Department, Washington, D. C.

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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.
45–33. Douglas fir plywood (domestic grades) (third edition).
46–36. Hosiery lengths and sizes (second 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.
57–36. Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings.
58–36. Woven elastic fabrics for use in overalls (overall elastic webbing.)
59–36. Woven dress fabrics—testing and reporting.
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.
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.

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

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