SPRUCE, AND WESTERN HEMLOCK STANDARD STOCK DOORS

(Fourth Edition)

COMMERCIAL STANDARD CS73-48

[Supersedes CS73-45]

Effective Date for New Production From July 20, 1948



A RECORDED VOLUNTARY STANDARD OF THE TRADE

UNITED STATES DEPARTMENT OF COMMERCE

CHARLES SAWYER, Secretary

COMMODITY STANDARDS

Simplified Practice Recommendations and Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Commodity Standards Division ¹ of the National Bureau of Standards. The purpose of Simplified Practice Recommendations is to eliminate avoidable waste through the establishment of standards of practice for stock sizes and varieties of specific commodities that currently are in general production and demand. The purpose of Commercial Standards is to establish standard methods of test, rating, certification, and labeling of commodities, and to provide uniform bases for fair competition.

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COMMERCIAL STANDARD FOR OLD GROWTH DOUGLAS FIR, SITKA SPRUCE, AND WESTERN HEMLOCK STAND-ARD STOCK DOORS

On April 4, 1938, at the instance of the Fir Door Institute, a general conference of representative manufacturers, distributors, and users of old growth Douglas fir standard stock doors adopted a recommended commercial standard for this commodity which was subsequently accepted by the trade and published as Commercial Standard CS73–38. The standard was revised in 1943 and 1945.

A recommended revision, submitted by the Fir Door Institute and endorsed by the standing committee, was circulated on January 14, 1948, to the trade for written acceptance. Those concerned have since accepted and approved the revised standard as shown herein.

Project Manager: J. W. Medley, Commodity Standards Division, National Bureau of Standards.

Technical Adviser: V. B. Phelan, Building Technology Division, National Bureau of Standards.

¹ Effective July 1, 1947, the Division of Simplified Practice, organized in 1921, and the Division of Trade Standards, organized in 1927, were combined to form the Commodity Standards Division. Since their organization, both of these Divisions have assisted many industries in the development of Simplified Practice Recommendations and Commercial Standards for a wide variety of commodities. A list of previously established Commercial Standards appears herein. A list of effective Simplified Practice Recommendations may be obtained from the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

COMMERCIAL STANDARD CS73-48

for

OLD GROWTH DOUGLAS FIR, SITKA SPRUCE, AND WESTERN HEMLOCK STANDARD STOCK DOORS 1

PURPOSE

- 1. This standard is a basis for common understanding between manufacturers, distributors, and users of Douglas fir, Sitka spruce, and Western hemlock stock doors. By its general acceptance, use, and certification by labels it is hoped to increase interest in the manufacture, sale, and use of Douglas fir, Sitka spruce, and Western hemlock doors manufactured to standard grades, to the mutual advantage of all concerned.
- 2. In the development of these standards there is no desire to suppress architectural expression, and custom-made doors will still be available from the usual sources. However, the establishment of construction standards, together with universally accepted sizes and layouts, should prove highly advantageous by eliminating the causes of many misunderstandings occurring through the lack of standards, and produce economies in manufacture and sale which should be shared by the ultimate home owner.

SCOPE

3. This standard provides minimum specifications for four grades of Douglas fir, Sitka spruce, and Western hemlock stock doors in four thicknesses, ¾, 1½, 1¾, and 1¾ inches. It covers construction, defects, and the grading tolerances for these requirements. Standard stock layouts and designs are covered in door sizes ranging as follows, and in accordance with detailed schedules of the Douglas fir, Sitka spruce, and Western hemlock stock door list beginning on page 7.

Cupboard doors	1 ft 0 in.	x	1	ft	6	in.	to	2	ft	0	in.	x	6 ft	0 in	
Side lights	10 in.	X	6	ft	8 i	in.	to	1	ft	6	in.	x	7 ft	0 in	
House doors	2 ft 0 in.	X	6	ft	0 i	in.	to	3	ft	0	in.	\mathbf{x}	7 ft	0 in	
Garage doors	2 ft 0 in	v	7	ft.	Ωi	in	tο	4	ft.	0	in	v	& ft	0 in	

^{1 &}quot;Old growth Douglas fir" is a term generally applied to distinguish the wood developed in the later stages of the tree's growth. It is generally free from knots; of medium density with fairly close, uniformly spaced growth rings; and usually of uniform light yellowish or pinkish color. The wood is moderately hard, is resilient, tough, durable, and practically impervious to water; holds nails firmly and takes stain and paint well. The resin in the wood makes it durable. Because of the very small amount of sapwood on a Douglas fir log, it is easy to obtain lumber free from sapwood. This small portion of sapwood is a reason too for the durability of Douglas fir, for heartwood is more durable than sapwood.

Sitka spruce, renowned since World War I as airplane spruce, is distinguished for its toughness yet easy workability and its clear, straight-grained character. It has only very moderate shrinkage or swelling tendencies even under adverse climatic conditions, rating high among millwork species.

Western hemlock is closely associated with Douglas fir in the northwest forests, and is distinct from Eastern hemlock. The wood from Western hemlock is moderately soft, straight-grained, nonresinous and uniform in texture and is often mixed with Douglas fir in certain standard lumber grades. Western hemlock has found wide use in construction for siding, ceiling, gooring, and finish, as well as in dimension.

has found wide use in construction for siding, ceiling, flooring, and finish, as well as in dimension.

A list of the standard door sizes in the above ranges is given in table 1, page 6.

GENERAL REQUIREMENTS

4. All commercial standard Douglas fir, Sitka spruce, and Western hemlock doors shall meet the following general requirements:

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

fir, Sitka spruce, or Western hemlock.

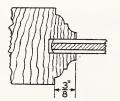
6. Workmanship.—Doors shall be well manufactured and machined and both faces shall have flat surfaces; that is, with stiles, rails, and

panels smoothly sanded.

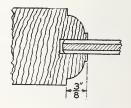
7. Construction.—Doors shall be assembled by what is known as "dowelled construction"; that is, stiles and rails shall be bored to receive fir dowels not less than % inch in diameter by 5 inches long for doors ¾ inch thick, and not less than % inch in diameter by 5 inches long for doors 1½, 1¾, and 1¾ inches thick. The dowels shall have glue grooves. Dowels shall be set in glue, and extend approximately one-half of their length into each stile and rail, and be assembled under pressure. Because of the fact that all present standard door boring machines are built for 2¼-inch dowel centers, the required number of dowels used in joining rails to stiles are limited according to the width of the rails, and shall be based on a minimum number of dowels at each end of rails as follows:

Rails under 4½ in. wide	1 dowel.
Rails 4½ in. to 7 in. wide	2 dowels.
Rails over 7 in. wide	3 dowels.

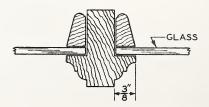
8. Sticking.—Three-eighths-inch "bead and cove" or "ovolo" sticking shall be standard on all standard doors. "Bead and cove" sticking will be furnished, unless otherwise specified. (See fig. 1.)



BEAD & COVE STICKING



OVOLO STICKING



STANDARD PATTERN GLASS BEAD FIGURE 1.5Sticking.

Defective sticking which may develop in machining must be carefully repaired or neatly replaced.

9. Thicknesses.—Doors shall be in the following thicknesses, and a

thickness tolerance of minus 1/16 inch shall be allowed:

10. Standard house doors will be prefitted at the factory. Standard stock prefitted sizes are $\%_6$ inch less in width, and % inch less in height than the nominal size. Thus, a nominal 2 ft 6 in. by 6 ft 8 in. door is prefitted to net 2 ft $5^1\%_6$ in. by 6 ft $7\%_6$ in. A tolerance of $\%_2$ inch plus or minus is permissible. Prefit machining shall be smoothly sawn and cut square. Scuff strips shall be securely attached to the bottom of each stile for protection in handling.

11. Machining for hardware.—When desired, to be as specified by

the buyer.

12. Resin sealer-prime coat.—A resin sealer-prime coat shall be uniformly applied to ends, edges, and faces of all doors. It shall not leave a sticky film or residue, shall be free from objectionable odors, and shall not unduly affect the appearance of the door. The treatment shall in no way adversely affect the paintability as to drying time, sheen, or adhesion of finish.

INSPECTION AND LABELING

13. All doors guaranteed to conform to the grading rules of this commercial standard shall be grade-marked by stamp, brand, or label. All complaints involving the quality of any shipment must be made within 5 days from receipt thereof.

DETAIL REQUIREMENTS

14. Standard stock layouts and designs to which the design numbers given herein refer are to be found in the Douglas fir, Sitka spruce, and Western hemlock stock-door list beginning on page 7.

15. It is impossible to maintain absolutely arbitrary rules fixing grades, and slight variations within reason and governed by practical common sense may be expected. A shipment of any grade must

represent a fair average of that grade.

16. Doors shall be graded on both sides or faces in accordance with the following standard grades: Grades A, B, and C, covering standard house doors, will be furnished in 1%- and 1%-inch thicknesses only. Standard side lights and doors of special layout or design will be furnished in grade A only. Cupboard doors will be furnished in B and better grade only. House doors 1% inches thick will be furnished in "Millrun" grade only.

HOUSE DOORS

Grade A.—RECOMMENDED FOR PAINT OR ENAMEL FINISH—TO BE FACTORY RESIN-SEALED

17. Stiles, rails, and mullions.—This stock shall be heartwood, all vertical grain old growth Douglas fir, Sitka spruce, or Western hemlock, the faces of which must be clear, with the exception that small, inconspicuous, and neatly repaired pitch seams are permissible. Characteristic sound dark streaks are permitted in hemlock. Gluedup rails are permissible in widths over 4½ inches. A moisture-resis-

tant glue shall be used. Mixing of woods is not permitted.

18. Panels, flat-veneered.—The standard thickness of 3-ply flat-veneered panels shall be ¼ inch after sanding. Each face shall be of a yellowish or pinkish color or a blend of the two, and shall be from smoothly cut veneer, free from knots, splits, pitch pockets, and other open defects. Small streaks and spots of other colors are permissible, provided that they in no manner make the panel unusable for the purpose intended. Shims that occur only at the end of panels and inconspicuous well-matched patches shall be admitted.

19. Panels, solid raised.—The standard thickness of solid raised panels shall be not more than \%6 inch before sanding and not less than \%6 inch after sanding. They shall be either all vertical or all slash grain in any one door, and shall conform to the grade of the stiles and

rails.

Grade B.—Recommended Primarily for Paint Finish—To Be Factory Resin-Sealed

20. Stiles, rails, and mullions.—This stock shall be of vertical grain faces with some coarse grain permitted. It shall be sound in all respects, and may contain sap, light stains, streaks, burls, and neatly repaired pitch seams. Glued-up members are permissible. A moisture-resistant glue shall be used. Mixing of woods is permissible

provided both stiles are of a single species.

21. Panels, flat-veneered.—The standard thickness of 3-ply flat-veneered panels shall be ¼ inch after sanding. 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.

22. Panels, raised.—The standard thickness of raised panels shall

22. Panels, raised.—The standard thickness of raised panels shall be not more than \(\frac{1}{16} \) inch before sanding and not less than \(\frac{1}{16} \) inch after sanding. They may be either slash or mixed grain, or mixed woods and shall conform to the grade of the stiles and rails. Glued-up, solid

panels are permissible.

Grade C.—RECOMMENDED FOR PAINT FINISH ONLY—TO BE FACTORY RESIN-SEALED

23. This grade is a factory accumulation and is manufactured and sold only in the standard designs, as specifically indicated in the layout details on pages 12, 13, 17, 18 and 19.

24. Stiles, rails, and mullions.—This stock may be of mixed grain and mixed woods and may contain any amount of discolored sap or heartwood, burls, solid pitch, streaks, and any number of repaired pitch seams, or other sound defects not otherwise permitted in the higher grades, providing it presents a solid surface. Glued-up members are permissible. A moisture-resistant glue shall be used.

25. Panels, flat-veneered.—The standard thickness of 3-ply flat-veneered panels shall be ¼ inch after sanding. Each face shall present a smooth surface suitable for painting. Discoloration, unmatched

patches, shims, and pieced faces are admissible.

26. Panels, raised.—The standard thickness of raised panels shall be not more than % inch before sanding and not less than 1/16 inch after They shall conform to the grade of the stiles and rails. Glued-up, solid panels are permissible.

Millrun Grade.—To BE FACTORY RESIN-SEALED

27. Stiles, rails, and mullions.—This grade shall be manufactured and sold in 1%-inch thickness only, developed and accumulated by planing down stock too thin for 1%-inch thickness; consequently it will include an undetermined amount of all or any of the other grades. This grade and thickness shall be confined to the following standard designs: F3, F3W, F13, F13W, F33, F133, F05, F020, and F082.

(See stock door list beginning on page 7.)
28. Panels, flat-veneered.—The standard thickness of 3-ply flat-veneered panels shall be ¼ inch after sanding. They shall conform to the grades applying to grade B and/or grade C doors, described

above.

29. Panels, raised.—The standard thickness of raised panels shall be not more than \%6 inch before sanding, and not less than \%6 inch after They shall conform to the grades applying to grade B and/or grade C doors, described above.

GARAGE DOORS.—To Be Factory Resin-Sealed

Garage doors are manufactured primarily for paint finish in one

quality only, which is described below.

30. Stiles, rails, and mullions.—This stock shall be substantially all vertical grain, with accumulations of coarse or mixed grain or mixed woods permitted. It shall be sound in all respects, and may contain sap, stain, burls, pitch streaks, and neatly repaired pitch seams. Glued-up members are permissible. A moisture-resistant glue shall be used.

31. Panels, flat-veneered.—The standard thickness of 3-ply flatveneered panels shall be ¼ inch after sanding. They shall be of door panel grade B, as described under paragraph 21.

32. Panels, solid raised.—The standard thickness of solid raised panels shall be not more than %6 inch before sanding and not less than %6 inch after sanding. They may be vertical, slash, or mixed grain, at the option of the manufacturer, and shall conform to the grade of the stiles and rails.

33. Batten garage doors (designs F190 and F290).—The stiles and battens shall have all vertical grain faces, which shall be clear, except

that neatly repaired pitch seams, not to exceed 4 inches in length, and at a minimum distance of 2 feet apart either way, will be admitted on each face of the door.

DESIGNS AND LAYOUTS

34. House doors of any design narrower than 1 foot 6 inches will be furnished with stiles 3% inches in width, over-all, unless otherwise specified.

35. Measurements for stiles, rails, and mullions shown in layouts are over-all, including sticking. Glass measurements shown may

vary slightly.

Table 1. Standard sizes (in feet and inches)

	CU	JPBOARD DO	OORS		
1-0 x 1-6 1-2 1-4 1-6 1-8 1-10 2-0 1-0 x 2-0 1-2 1-4 1-6 1-8 1-10 2-0	1-0 x 2-6 1-2 1-4 1-6 1-8 1-10 2-0 1-0 x 3-0 1-2 1-4 1-6 1-8 1-10 2-0	1-0 x 3-6 1-2 1-4 1-6 1-8 1-10 2-0 1-0 x 4-0 1-2 1-4 1-6 1-8 1-10 2-0	1-0 x 1-2 1-4 1-6 1-8 1-10 2-0 1-0 x 1-2 1-4 1-6 1-8 1-10 2-0		1-0 x 5-6 1-2 1-4 1-6 1-8 1-10 2-0 1-0 x 6-6 1-2 1-4 1-6 1-8 1-10 2-0
		HOUSE DOO	RS		
2-0 x 6-0 2-4 2-6 2-8 3-0	2-0 x 6 2-4 2-6 2-8 3-0	-6 SIDE LIGHT	2-0 x 6-8 2-4 2-6 2-8 3-0		^a 2-0 x 7-0 ^a 2-4 ^a 2-6 ^a 2-8 ^a 3-0
10" x 6 1-0 1-2 1-4 1-6	6–8	10'' x 6-10 1-0 1-2 1-4 1-6		10" x 1 1-0 1-2 1-4 1-6	7-0
	C	SARAGE DOC	ORS	· · · · · · · · · · · · · · · · · · ·	
2-0 x 7 2-4 2-6 2-8 3-0 3-6 3-9 4-0	7-0	2-0 x 7-6 2-4 2-6 2-8 3-0 3-6 3-9 4-0		2-0 x 8 2-4 2-6 2-8 3-0 3-6 3-9 4-0	3-0

^{* 13/4-}inch thickness only.

DOUGLAS FIR, SITKA SPRUCE, AND WESTERN HEMLOCK-STOCK DOOR LIST

36. The stock layouts and designs for old growth Douglas fir, Sitka spruce, and Western hemlock doors are illustrated beginning on page 11.

37. An index immediately follows showing the various use classifications including front entrance doors, interior doors, etc., and indicating the identifying stock number, a brief description of the panel arrangement, and the pages on which the illustrations and dimensions appear.

38. A second index (see p. 9) shows the stock numbers in numerical

sequence.

"USE" CLASSIFICATION INDEX

Stock No.	Description	Page
	Front Entrance Doors	
F88	8 equal panel	12 14 14 14 15 16 16 16 17 19 20 20 20 20 20 20 20 20 20 20 20 20 20
•	SIDE LIGHTS	
F035 F0535 F0635M	1 light	. 21
F2 F20, F21, F22 F88 F5 F5 F66 783158—48——2	1 panel (insert) 1 panel 8 equal panel 5 cross panel 6 panel Colonial	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

"USE" CLASSIFICATION INDEX-Continued

Stock No.	Description	Page
	Interior Doors—Continued	
F3, F3W	3 equal panel	12
F33	3 panel	13
F44	4 panel (vertical)	13
F82	2 panel	14
F28, F29	do	15
F62	3 panel (2 vertical)	15
F535, F536, F537	5 light (horizontal)	19
F835, F836, F837	8 light (horizontal)	$\frac{10}{20}$
F1035 F1036 F1037	10 light (2 wide—5 high)	$\tilde{20}$
F1035, F1036, F1037 F1235, F1236, F1237	10 light (2 wide—5 high) 12 light (3 wide—4 high)	20
F1535, F1536, F1537	15 light (3 wide—5 high)	21
F1635, F1636, F1637	16 light (2 wide—8 high)	21
F1035, F1030, F1037	To light (2 wide—8 high)	21
	REAR ENTRANCE DOORS	
F13, F13W	2 panel—1 light	12
F133	do_:	13
F182	1 panel—1 light	14
F108, F109	do	14
F982	1 panel—9 light (3 wide—3 high) 1 panel—1 light	14
F128, F129	1 panel—1 light	15
F114	2 panel—1 light	17
F147	1 panel—1 light	17
F117	4 panel—1 light	17
F214	3 panel—1 light	17
F416	3 panel—4 light (2 wide—2 high)	18
F118	3 panel—1 light 3 panel—4 light (2 wide—2 high) 3 panel—1 light	18
F318	3 panel—3 light (vertical)	18
F418	3 panel—4 light (vertical)	18
F618	3 panel—6 light (3 wide—2 high)	19
F918	3 panel—6 light (3 wide—2 high) 3 panel—9 light (3 wide—3 high)	19
	Cyppoint Doors	
	CUPBOARD DOORS	
F05	Cross panel	22
F020	1 panel	22
F082	2 panel	22
	Garage Doors	
	GARAGE DOORS	
F491	Sawbuck—4 light	22
F691	Sawbuck—6 light	22
F493	Sawbuck—6 light2 panel (vertical)—4 light3 panel (vertical)—6 light	23
F693	3 panel (vertical)—6 light	23
F495	4 cross panel—4 light	$\frac{20}{23}$
F695	4 cross panel—4 light 4 cross panel—6 light	$\frac{23}{23}$
F496	4 panel—4 light	24
F696	6 panel—6 light	$\frac{21}{24}$
F894	4 panel—8 light	$\tilde{24}$
F093	6 panel (vertical)	$\tilde{25}$
		$\frac{25}{25}$
	y nanel (vertical)	
F099	9 panel (vertical) Flush door—1 light	
	Flush door—1 lightFlush door—2 light	$\frac{25}{25}$

STOCK NUMBER INDEX

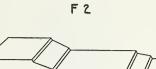
Stock No.	Description	Page
	House Doors	
F2 F3 F3W F5 F13W F20 F21 F22 F28 F29 F33 F35 F36 F37 F44 F62 F66 F82 F88 F108 F109 F110 F111 F111	1 panel (insert)	11 12 12 12 12 12 11 11 11 15 15 13 19 19 19 19 11 14 11 14 14 16 16 16 17 17
F111 F114	do	16 17
F310 F311 F318 F416 F418 F535 F536 F537 F610 F611 F618 F810 F811 F835 F835 F836 F837	1 panel—3 light (vertical) do 3 panel—3 light (vertical) 3 panel—4 light (2 wide—2 high) 5 light (horizontal)dododo 1 panel—6 light (3 wide—2 high) 1 panel—6 light (4 wide—2 high) 1 panel—8 light (4 wide—2 high)dodo 8 light (horizontal)dodo 3 panel—9 light (3 wide—3 high)	16 16 18 18 18 19 19 16 16 16 20 20

STOCK NUMBER INDEX—Continued

Stock No.	Description	Page
	House Doors-Continued	
F1037 F1235 F1236 F1237 F1535 F1536 F1537 F1635 F1636	dodo 1 panel—9 light (3 wide—3 high) 10 light (2 wide—5 high)dododo 12 light (3 wide—4 high)	20 20 20 14 20 20 20 20 20 21 21 21 21 21 21 21
	Side Lights	
F035 F0535 F0635M	1 light	21 21 21
	Cupboard Doors	
F05 F020 F082		22 22 22
	Garage Doors	
F093 F099 F190 F290 F491 F493 F495 F696 F691 F693 F695 F696 F894	Flush door—1 light_ Flush door—2 light_ Sawbuck—4 light	25 25 25 25 25 22 23 23 24 22 23 23 24 22 23 24 22 24 22

HOUSE DOORS

F2



Flat insert frame. Sticking: P & G.

Stiles and top rail	49/16"
Bottom rail	93/8"
Insert frame	29/16"

3-ply laminated flat panel. Furnished in grades A and B only.



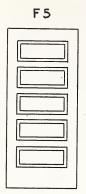
	F20	F21	F22
Stiles			53/8"
Top rail	4%6''	53/8"	53/8"
Bottom rail	93/8"	113/8"	113/8"

3-ply laminated flat panel. Furnished in grades ${\cal A}$ and ${\cal B}$ only. Sticking: Standard,

F	88

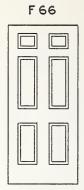
Stiles and top rail	4%6"
Stries and top ran	4916
Intermediate rails and muntins	27/8"
Bottom rail	93/8"

3-ply laminated fiat panels. Can also be furnished with raised panels, if deslred. Furnished in grades A and B only. Sticking: Standard.



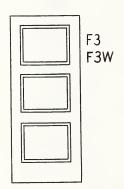
Stiles and top rail	4%16'
Intermediate rails	41/2"
Bottom rail	93/8"

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades $A,\,B,\,$ and $\,C.\,$ Sticking: Standard.



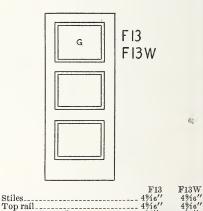
Stiles and top rail	49/16"
Lock rail	4%6" 738" 4½" 938" 36½"
Intermediate rail and muntins	41/2"
Bottom rail	93/8"
Height from floor to top of lock rail	36½"
Height from top of intermediate rail to top	
of door	125/16"
Height of center panels varies with height	
of door.	

Doors 1' 8'' and narrower made one panel wide. 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A and B only. Sticking: Standard.



	F3	-F3W
Stiles		4%16''
Top rail	4%6''	4%6''
Intermediate rails		41/2"
Bottom rail	93/8"	93%''

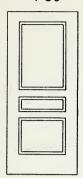
3-ply laminated flat panels. Furnished in grades A, B, and C, and $1\frac{1}{6}$ " millrun. Sticking: Standard.



Intermediate railsBottom rail	2½" 9¾"	4½'' 9¾''
3-ply laminated flat panels. grades A , B , C , and $1\frac{1}{6}$ " mil Standard.	Furn lrun.	ished in Sticking:

Size of door		f glass
	F13	F13W
2'6'' x 6'6''		215/8" x 207/16"
2'8" x 6'8"	235/8" x 215/16"	235/8" x 211/8"
3′ 0′′ x 7′ 0′′	275/8" x 2211/16"	
Beads	for glass include	d.

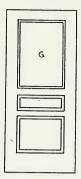
F33



Stiles and top rail	49/16"
Intermediate rails	41/2"
Bottom rail	93/8"
Height from floor to top of upper cross rail	421/4"

3-ply laminated flat panels. Furnished in grades A, B, C, and 1½" millrun. Sticking: Standard.

F133

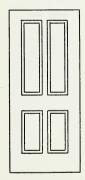


Stiles and top rail	49/16"
Intermediate rails	41/2"
Bottom rail	93/8"

3-ply laminated flat panels. Furnished in grades A, B, C, and 1½" millrun. Sticking: Standard.

Size of door	Size of glass
2' 6" x 6' 6"	215/8" x 32"
2' 8"' x 6' 8"	235/8" x 34"
3' 0'' x 7' 0''	275/8" x 38"
Beads for glass included	

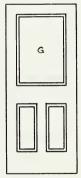
F44



Stiles and top rail	4%16"
Lock rail	73/8"
Muntins	41/2"
Bottom rail	93/8"
Height from floor to top of lock rail	361/2"

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A and B only. Sticking: Standard.

F144

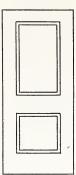


Stiles and top rail	494011
Lock rail	73611
Muntins	
Bottom rail	93/8"

 ${\mathbb F}$ 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A and B only. Sticking: Standard.

Size of door	Size of glass
	2158" x 38"
2' 8'' x 6' 8''	235/8" x 40" 275/8" x 44"
Beads for glass included.	21/8 411

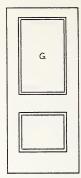
F82



Stiles and top rail	4%6"
Lock rail	738"
Bottom rail	938"
Height to top of lock rail	361/2"

3-ply laminated flat panels. Furnished in grades A and B only. Sticking: Standard.

F182

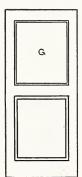


Stiles and top rail 49 Lock rail 73 Bottom rail 93	16" 8" 8"
--	-----------------

3-ply laminated flat panels. Furnished in grades ${\cal A}$ and ${\cal B}$ only. Sticking: Standard.

Size of door	Size of glass
2' 6'' x 6' 6''	215/8" x 38"
	275/8" x 44"
Beads for glass included.	

F108 F109

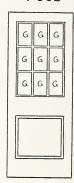


	F108	F109
Stiles	4%6''	53/8"
Top and lock rails		53/8"
Bottom rail	93/8"	93%''

3-ply laminated flat panels. Furnished in grades A and B only. Sticking: Standard.

	Size of glass		
Size of door	F108	F109	
2' 6" x 6' 6"	215/8" x 26"	20" x 26"	
	235/8" x 28"	22" x 28"	
3' 0" x 7' 0"	275/8" x 32"	26'' x 32''	
Beads for glass included.			

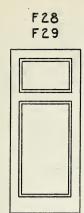
F 982



Stiles and top rail	
Lock rail	
Bottom rail	93/8"

Bars $1\!\!/2''$ between glass. 3-ply laminated flat panel. Furnished in grades A and B only. Sticking: Standard.

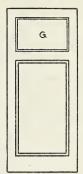
Size of door	Size of glass
2' 6'' x 6' 6''	678" x 125/16"
2' 8'' x 6' 8''	7½" x 13"
3′ 0′′ x 7′ 0′′	87/8" x 145/16"
Beads for glass included	l .



	F28	F29
Stiles and top rail Lock rail Bottom rail Height from top of lock rail to top of door	4%16" 4½" 938"	53%'' 53%'' 113%''

 $\frac{3}{A}$ -ply laminated flat panels. Furnished in grades $\frac{A}{A}$ and $\frac{B}{A}$ only. Sticking: Standard.

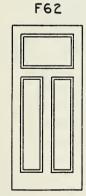




	•	F128	F129
Stiles and top rail Lock rail Bottom rail		4%6" 4½" 93%"	53%'' 53%'' 113%''

3-ply laminated flat panels. Furnished in grades A and B only. Sticking: Standard.

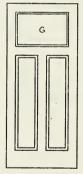
	Size of glass		
Size of door	F128	F129	
2'6" x 6'6"	215/8" x 18" 235/8" x 18"	20" x 18" 22" x 18"	
3'0" x 7'0" Beads for glas	275/8" x 18"	26" x 18"	



Stiles and top rail	49/16"
Lock rail and muntin	41/2"
Bottom rail	93/8"
Height from top of lock rail to top of door	22''

3-ply laminated flat panels. Furnished in grades A and B only. Sticking: Standard.

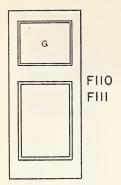
F 162

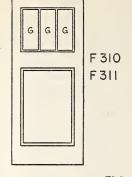


Stiles and top rail	4%6"
Lock rail and muntin	
Bottom rail	93/8"

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A and B only. Sticking: Standard.

Size of door	Size of glass
2'6" x 6'6" 2'8" x 6'8" 3'0" x 7'0" Beads for glass included.	215%" x 18" 235%" x 18" 275%" x 18"





Stiles	49/16"	53/8"
		09/8
Top rail	53/8"	53/8"
Lock rail	736''	73/8"
LOCK IAII		198
Bottom rail	936"	936"
Dottom ran	9 %8	998
	, -	

F110 F111

3-ply laminated flat panel. Furnished in grades A and B only. Sticking: Standard.

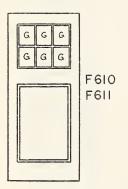
Size of door	F110	F111
2' 6'' x 6' 6''	275/8" x 22"	20" x 22" 22" x 22" 26" x 22"

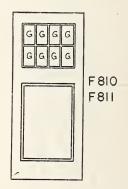
	F310	F311
Stiles	4%16"	53/8"
Top rail	53/8"	53/8"
Lock rail	73/8"	738"
Bottom rail	93/8"	934"
		, -

Bars ½" between glass. 3-ply laminated flat panel. Furnished in grades A and B only. Sticking: Standard.

Size of door. F310 F311

Size of door	F310	F311
3' 0"' x 7' 0"	61/8" x 22" 71/2" x 22" 81/8" x 22" lass included.	65/16" x 22" 615/16" x 22" 81/4" x 22"





	F610	F611
Stiles Top rail Lock rail Bottom rail		53/8'' 53/8'' 73/8'' 93/8''

Bars $\frac{1}{2}$ " between glass. 3-ply laminated flat panel. Furnished in grades A and B only. Sticking: Standard.

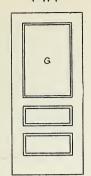
Size of door	F610	F611
2'8" x 6'8" 3'0" x 7'0"	67%'' x 1034'' 7½'' x 1034'' 87%'' x 1034'' for glass include	65/16" x 1034" 615/16" x 1034" 814" x 1034" ed.

	F810	F811
Stiles	4%16" 538" 738" 938"	53%'' 53%'' 73%'' 93%''

Bars $\frac{1}{2}$ " between glass. 3-ply laminated flat panel. Furnished in grades A and B only. Sticking: Standard.

Size of door	F810	F811
3' 0"' x 7' 0"	5" x 10¾" 5½" x 10¾" 6½" x 10¾" or glass included.	45%" x 1034" 51%" x 1034" 61%" x 1034"

F 114

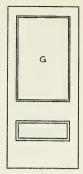


Stiles and top rail	4%16"
Intermediate rail	41/2"
Lock rail	
Bottom rail	938"

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A, B, and C. Sticking: Standard.

Si	ze of door	Size of glass
2'8	5" x 6'6" "' x 6'8" "' x 7'0" Beads for glass included.	215%" x 36" 235%" x 38" 275%" x 42"

F147

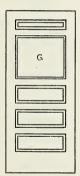


Stiles and top rail	53/8"
Lock rail	93/8"
Bottom rail	113/8"

3-ply laminated flat panel. Can also be furnished with raised panel, if desired. Furnished in grades A and B only. Sticking: Standard.

Size of door	Size of glass
2'8" x 6'8" 3'0" x 7'0" Beads for glass include	26" x 50"

F117

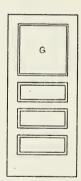


Stiles	49/16"
Top and lock rails	53/8"
Intermediate rails.	
Bottom rail	93/8"

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A, B, and C. Sticking: Standard.

Size of door	Size of glass
2'6" x 6'6" 2'8" x 6'8" 3'0" x 7'0" Beads for glass included	215/8" x 24" 235/8" x 26" 275/8" x 30"

F214

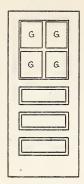


Stiles and top rail	4%6"
Lock and intermediate rails	41/2"
Bottom rail	93%''

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades $A,\,B,$ and C. Sticking: Standard.

Size of door	Size of	grass
2'6" x 6'6" 2'8" x 6'8" 3'0" x 7'0" Beads for glass included.	215%" x 235%" x 275%" x	26"

F416

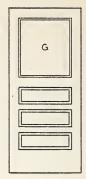


Stiles and top rail	49/16"
Lock rail	
Intermediate rails	
Bottom rail	93/8′′

Bars ${\mathcal V}_2^{\prime\prime\prime}$ between glass. 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades $A,\ B,$ and C. Sticking: Standard.

Size of door	Size of glass
2' 6'' x 6' 6'' 2' 8'' x 6' 8'' 3' 0'' x 7' 0'' Beads for glass included.	

F118

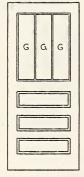


Stiles	49/16"
Top and lock rails	
Intermediate rails	
Bottom rail	

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades $A,\ B,$ and C. Sticking: Standard.

Size of door	Size of glass
2′ 6″ x 6′ 6″ 2′ 8″ x 6′ 8″ 3′ 0″ x 7′ 0″ Beads for glass included.	235/8" x 34"

F 318

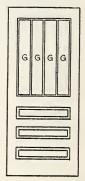


Stiles	4%6"
Top and lock rails	53/8"
Intermediate rails	33/8"
Bottom rail	93/6"

Bars $\frac{1}{2}$ " between glass. 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A, B, and C. Sticking: Standard.

Size of door	Size of glass
2' 6'' x 6' 6''	67%'' x 32'' 7½'' x 34'' 87%'' x 38''

F418



Stiles	49/16"
Top and lock rails	53,8"
Intermediate rails	33/8"
Bottom rail	93/8"

Bars $\frac{1}{2}$ " between glass. 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A, B, and C. Sticking: Standard.

5120 01 0001	DIZC OI GIASS
2' 6'' x 6' 6''	5" x 32" 5½" x 34" 6½" x 38"

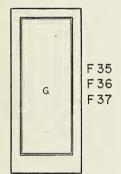




Stiles	49/16"
Top and lock rails	53/8"
Intermediate rails	33/8"
Bottom rail	936"
	0/0

Bars 1/2'' between glass. 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A, B, and C. Sticking: Standard.

Size of door	Size of glass
2'6" x 6'6" 2'8" x 6'8" 3'0" x 7'0" Beads for glass included	67%'' x 15¾'' 7½'' x 16¾'' 87%'' x 18¾''

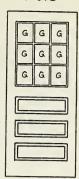


	F 30	F 30	F 31
Stiles	4%6"	53/8"	538"
Top rail	49/16"	53/8"	63/8"
Bottom rail	93/8"	113/8"	183/8"

Furnished in grades A and B only. Sticking:

Size of door		F35	F36	F37
2' 6" x 6' 6" 2' 8" x 6' 8" 3' 0" x 7' 0" H	235/8" 275/8"	x 6613/16"	22" x 64" 26" x 68"	22" x 56"

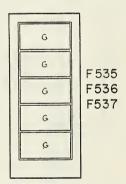
F 918



Stiles	4916"
Top and lock rails	53/8"
	33/8"
Bottom rail	93/8"

Bars ½" between glass. 3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Furnished in grades A, B, and C. Sticking: Standard.

Circ of doe

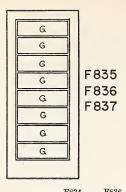


	F 535	F 536	F 537
Top rail	4%16''	53/8''	53/8''
	4%16''	53/8''	63/8''
	938''	113/8''	183/8''

Bars $\frac{1}{2}$ " between glass. Furnished in grades A and B only. Sticking: Standard.

Size of door	F535	glass F536
2' 6" x 6' 6" 2' 8" x 6' 8" 3' 0" x 7' 0"		20" x 11 ¹ 5/16" 22" x 125/16" 26" x 135/8"
		F537

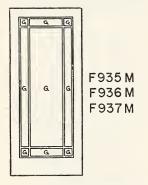
6" 8"	22" x 10¾"
 Beads for glass included	



	T. 999	1.000	1.001
Stiles	49/16"	538''	53/8''
Top rail		538''	63/8''
Bottom rail		1138''	183/8''

Bars $\frac{1}{2}$ " between glass. Furnished in grades A and B only. Sticking; Standard.

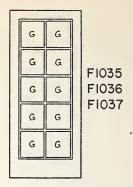
Size of door		F836	F837
2' 8" x 6' 8"	' 215%'' x 75%'' ' 235%'' x 77%'' ' 275%'' x 83%'' Beads for glass	20" x 7¼" 22" x 7½" 26" x 8" included.	20" x 6½" 22" x 6½" 26" x 7"



F935M F9	936M F937M
Stiles	53%" 53%" 53%" 63%" 13%" 183%"

Bars $\frac{1}{2}$ " between glass. Furnished in grades A and B only. Sticking: Standard.

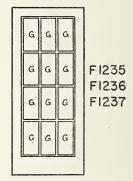
•	0		
Size of door		of glass (ir 35M	inches)
2' 6" x 6' 6" 5 x 5 2' 8" x 6' 8" 5 x 5 3' 0" x 7' 0" 5 x 5	5 x 5334 5 x 5534 5 x 5934	5 x 10½ 5 x 12½ 5 x 16½	10½ x 53¾ 12½ x 55¾ 16½ x 59¾
	F9	36M	
2' 6" x 6' 6" 5 x 5	5 x 507/8	5 x 8 1/8	87/8 x 507/8
2' 8" x 6' 8" 5 x 5	5 x 5278	5 x 107/8	1078 x 5278
3' 0" x 7' 0" 5 x 5	5 x 567/8	5 x 147/8	147/8 x 567/8
	F9	37M	
2' 6" x 6' 6" 5 x 5	5 x 427/8	5 x 87/8	87% x 427%
2' 8" x 6' 8" 5 x 5	5 x 447/8	5 x 107/8	1078 x 4478
3' 0" x 7' 0" 5 x 5		5 x 147/8	1478 x 4878
	s for glass i		11/8 1 10/8
Dead	0 101 81999 1	moradeu.	



	F1035	F1036	F1037
Stiles	4916"	53/8''	538''
Top rail		53/8''	638''
Bottom rail		113/8''	1838''

Bars 1/2" between glass. Furnished in grades A and B only. Sticking: Standard.

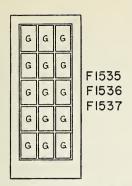
Size of door	Size of glass F1035	(in inches) F1036
2' 6" x 6' 6" 2' 8" x 6' 8" 3' 0" x 7' 0"	10½ x 12½ 11½ x 12% 13½ x 13¾	911/6 x 117/8 1011/16 x 125/16 1211/16 x 133/16 F1037
2' 6'' x 6' 6'' 2' 8'' x 6' 8'' 3' 0'' x 7 '0''		911/16 x 105/16 1011/16 x 103/4 1211/16 x 119/16
	r glass included	



	F1235	F1236	F1237
Stiles		53/8"	53/8"
Top rail		53/8"	63/8"
Bottom rail	93/8"	113/8"	1838''

Bars 1/2" between glass. Furnished in grades A and B only. Sticking: Standard.

Size of door	Size of glass F1235	
2'6'' x 6'6'' 2'8'' x 6'8'' 3' 0'' x 7' 0''	6 ¹ 3/16 x 15 ¹ 1/16 7 7/16 x 161/4 8 ¹ 3/16 x 171/4	65/16 x 151/16 615/16 x 159/16 81/4 x 169/16
2' 6'' x 6' 6'' 2' 8'' x 6' 8'' 3' 0'' x 7' 0''		814 × 149/16



Γ.			
	G	G	
	G	G	
	G	G	F 1635
	G	G	F 1635
	G	G	F 1637
	G	G	
	G	G	
	G	G	

	L 1999	T 1990	T 1001
Stiles	4%16"	53%''	53%''
Top rail		53%''	638''
Bottom rail		113%''	1838''

Bars ½" between glass. Furnished in grades A and B only. Sticking: Standard.

Size of door

Sizes of glass (in inches) F1535 F1536

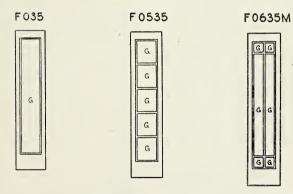
2' 6" x 6' 6" 613/6 x 121/2 2' 8" x 6' 8" 77/6 x 127/3 3' 0" x 7' 0" 913/6 x 133/4	615/16 x 125/16
	F1537
2' 6" x 6' 6" 2' 8" x 6' 8"	65/16 x 103/8 615/16 x 103/4
3′ 0″ x 7′ 0″	8¼ x 11%6
Beads for glass includ	led.

	F 1030	£ 1030	F1037
Stiles	49/16"	53%"	5¾"
Top rail		53%"	6¾"
Bottom rail		113%"	18¾"

Bars $1\!\!\!/2''$ between glass. Furnished in grades A and B only. Sticking: Standard.

Size of door	Sizes of glass F1635	(in inches) F1636
2' 6'' x 6' 6''	10½ x 75% 11½ x 77% 13½ x 83%	911/16 x 71/4 1011/16 x 71/2 1211/16 x 8
		F1637
3' 0"' x 7' 0"	glass included.	9 ¹ ½6 x 6 ¹ ⁄ ₄ 10 ¹ ½6 x 6½ 12 ¹ ½6 x 7

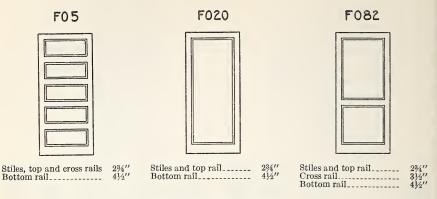
SIDE LIGHTS



Stiles	Not over 21/2" wide.
Top rail	Not over 61/2" wide.
Bottom rail.	Not over 181/2" wide.

Top and bottom rails made same width as in doors with which they are used. Bars $\frac{1}{2}$ " between glass. Furnished in grade A only. Sticking: Standard. Beads for glass included.

CUPBOARD DOORS

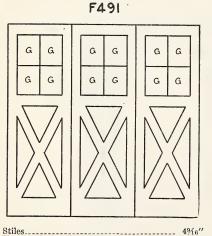


F05 doors are made as below:

1' 10"' to 2' 2"	2 cross panel.
2' 4" to 3' 0"	
3' 2" to 3' 10"	4 cross panel.
4' 0" to 5' 6"	5 cross panel

3-ply laminated flat panels.
F05 can also be furnished with raised panels.
Cupboard doors made in B and better grade only.
Sticking: Standard

GARAGE DOORS



			_				-
G	G	G		G	G	G	
G	G	G		G	G	G	
	X				X		

F691

 Stiles
 49/16"

 Top and lock rails
 53/8"

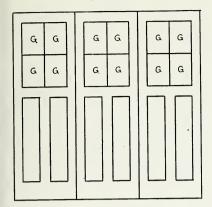
 Bottom rail
 93/8"

Vertical bars 5%" between glass. Horizontal bars 1" between glass. Ceiling panels. Cross braces screwed on. Sticking: Standard. Beads for glass included. Vertical and horizontal bars 1" between glass. Ceiling panels. Cross braces screwed on. Sticking: Standard. Beads for glass included.

Stiles, top and lock rails

For standard glass sizes of garage doors, see page 24.

F493

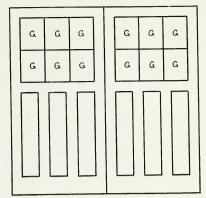


Stiles	49/16"
Ton and look raile	53/8"
Munting	59%''
Bottom rail	998
Vertical bars, 5%" between glass. Horizontal bars, 1" between glass.	
Horizontal bars, 1 between glass.	

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Beads for glass included.

F693

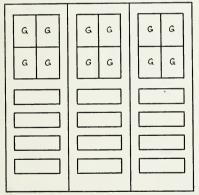


Stiles, top and lock rails	53/8"
Muntins	53/8"
Bottom rail	93/8"
Vertical and horizontal bars, 1" between glas	S.
Vertical and horizontal bars, 1" between glas	

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Beads for glass included.

F495



Stiles	4%6"
Top and lock rails	53/8"
Intermediate rails	
Bottom rail	938"
Vertical bars, 58" between glass.	
Horizontal hars 1" between glass.	

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Beads for glass included.

F695

П				П				
	G	G	G		G	G	G	
	G	G	G		G	G	G	
	[•		
	L							1

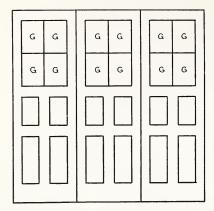
Stiles, top and lock rails	53/8"
Intermediate rails	41/2"
Bottom rail	936"
Vertical and horizontal bars, 1" between gla	88.

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Beads for glass included.

For standard glass sizes of garage doors, see page 24.

F496



Stiles	49/16"
Top and lock rails	53/8"
Intermediate rail and muntins	53/8"
Bottom rail	93/8"
Height of top panels, 95%", shoulder to sho	oulder.
Vertical bars, 5%" between glass.	
Harizontal hare 1" between glass	

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Beads for glass included.

STANDARD GLASS OPENINGS FOR STANDARD GARAGE DOOR DESIGNS SHOWN ON PAGES 22 TO 24.

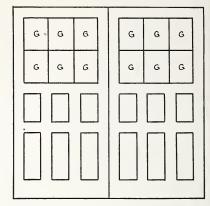
SETS

4 lights per door Size of door	Size of glass
2' 0" x 7' 6"	9½" x 16"
2' 6'' x 7' 0''	10½" x·16"
2' 6'' x 8' 0''	. 11½" x 13"
2' 8" x 7' 6"	

PAIRS

6 lights per door	
	ze of glass
	10" x 13"
	10" x 16"
3' 6" x 8' 0"	10" x 16"
3' 9'' x 7' 0''	11" x 13"
3' 9" x 7' 6"	11" x 16"
3' 9" x 8' 0"	11" x 16"
4' 0'' x 7' 0''	12" x 13"
	12" x 16"
4' 0'' x 8' 0''	12" x 16"

F696

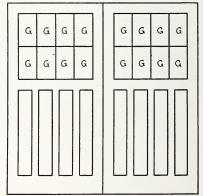


Stiles, top and lock rails	53/8"
Intermediate rail and muntins	53/8"
Bottom rail	93/8"
Height of top panels 95%", shoulder to shoulde Vertical and horizontal bars 1" between gla	er.
vertical and norizontal pars 1. Detween gia	iss.

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Beads for glass included.

F894

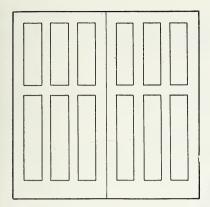


Stiles, top and lock rails	53/8"
Muntins	31/4"
Bottom rail	93/8"
Vertical bars, %" between glass.	
Horizontal bars, 1" between glass.	

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

Size of door	Size of glass
3′ 6″ x 7′ 0″	7½" x 13"
3' 6" x 7' 6" and 3'6" x 8'0"	7½" x 16" 8¾6" x 13"
3' 9" x 7' 6" and 3'9" x 8'0"	83/16" x 16"
4' 0" x 7' 0"	9" x 13" 9" x 16"
4' 0" x 7' 6" and 4'0" x 8'0"	9., X 10.

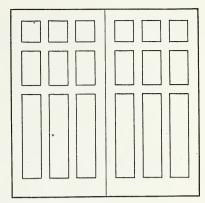




Stiles, top and lock rails	53/8"
Muntins	53/8"
Bottom rail	93/8"

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

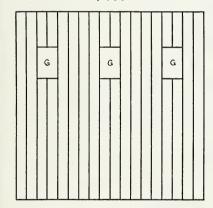
F 099



Stiles, top and lock rails	53/8'
Intermediate rails and muntins	53/8'
Bottom rail	938'

3-ply laminated flat panels. Can also be furnished with raised panels, if desired. Sticking: Standard.

F190



V. G. flush garage door in sets, with standard glass openings, as shown, or without glass openings (blank).

(blank).

Each side of each door with 6 batts ("V" ceiling strips) wide, 5 "V" grooves.

Stiles full thickness of door with intervening ceiling

strips glued and nailed to core.

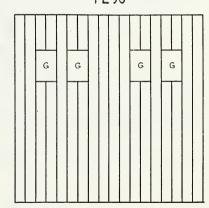
Sets of 3, standard width of each door 2'8", glass size 1058" x 16", beads tacked in.

One light per door, standard, placed 18" from top

of door.

Metal bars or leaded glass recommended for divided light effect, if desired. Made in 13/4" thickness only.

F290



V. G. flush garage doors in pairs, with standard glass openings, as shown, or without glass openings (blank).
Each side of each door with 9 batts ("V" ceiling strips) wide, 8 "V" grooves.
Stiles full thickness of door with intervening ceiling

strips glued and nailed to core.

Standard width of each door in pairs, 4'0", glass size 105%" x 16", beads tacked in.

Two lights per door, standard, placed 18" from top

of door.

Metal bars or leaded glass recommended for divided light effect, if desired. Made in 134" thickness only.

GRADE MARKING

39. The following sets forth the grade marking symbols adopted by the Fir Door Institute to preserve the high standards of quality herein recorded and to insure that distributors and ultimate consumers receive the proper grade of Douglas fir, Sitka spruce, or Western hemlock door for their specific needs.

40. All Douglas fir, Sitka spruce, or Western hemlock doors guaranteed to conform to the commercial standard grading rules herein shall be marked or branded with the letters "FDI" followed by the numerals designating the particular manufacturer. (The numerals 00 are used

here only for illustration.)

40 (a). All Douglas fir, Sitka spruce, or Western hemlock doors of A grade shall be stamped or branded



40 (b). All Douglas fir, Sitka spruce, or Western hemlock doors of B grade shall be stamped or branded



40 (c). All Douglas fir, Sitka spruce, or Western hemlock doors of C grade shall be stamped or branded



40 (d). All Douglas fir, Sitka spruce, or Western hemlock doors of "Millrun" grade shall be stamped or branded



EFFECTIVE DATE

41. Having been passed through the regular procedure of the Commodity Standards Division, and approved by the acceptors hereinafter listed, this commercial standard was issued by the United States Department of Commerce, effective from July 20, 1948.

Edwin W. Ely, Chief, Commodity Standards Division.

HISTORY OF PROJECT

42. On January 25, 1938, the Fir Door Institute requested the cooperation of the National Bureau of Standards in bringing together all interested parties for the development and establishment of standards for stock fir doors. A draft of the preliminary standard was sent on March 11, 1938, to a comprehensive list of those interested in the production, distribution, and use of this commodity. On April 4, 1938, a general conference was held at Tacoma, Wash., for public discussion of the proposed standard. Some modifications were made and the conference unanimously passed a resolution that the standard, as modified, be circulated for public acceptance as the commercial standard of the industry. This was done on April 28, 1938. Following satisfactory acceptance and in the absence of active opposition, the establishment of the commercial standard, designated as CS73–38, was announced on June 30, 1938, to become effective for new production immediately.

FIRST REVISION

43. On January 4, 1943, the Fir Door Institute submitted a proposed revision which included two new door layouts and a slight modification in the requirements for panels and bottom rails for grade A and grade B doors. These changes were approved by the standing committee, and the recommended revision was circulated on February 27, 1943 to those directly concerned for written acceptance.

44. Following acceptance by a satisfactory majority, the success of the revision was announced on May 15, 1943, as CS73-43, effective for

new production from June 15, 1943.

SECOND REVISION

45. Difficulties encountered in securing wide widths of old growth Douglas fir shop lumber led to the submission, by the Fir Door Institute, of a proposed revision on April 27, 1945, to permit a limited number of stiles, rails, and mullions to be glued up with moisture-resistant glue. The millrun grade was dropped from five layouts, two stock layouts were deleted entirely, and six additional layouts were made available in grades C and millrun. Upon approval by the standing committee, the recommended revision was circulated to the trade for written acceptance on June 25, 1945. Following acceptance by a satisfactory majority, the standard was promulgated as CS73–45, effective from September 20, 1945.

THIRD REVISION

46. Pursuant to a request from the Fir Door Institute dated April 1. 1947, and following approval by the standing committee, a revision of this standard was circulated on January 14, 1948, to the trade for

written acceptance.

47. The main purpose of this revision was to include doors made from Sitka spruce and Western hemlock, as well as from Douglas fir. Several sizes of house doors were eliminated, as well as seventeen designs which are no longer in large demand. The success of the revision was announced on June 21, 1948, as Commercial Standard CS73-48.

STANDING COMMITTEE

48. 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 Commodity Standards Division, National Bureau of Standards, which acts as secretary for the committee.

W. P. Woolley (chairman), M & M Wood Working Co., 2301 N. Columbia

Blvd., Portland 3, Oreg.

Henry L. Mertz, Buffelen Lumber & Mfg. Co., P. O. Box 1595, Tacoma 1, Wash. N. O. Cruver, The Wheeler, Osgood Co., 1216 St. Paul Ave., Tacoma 1, Wash. D. C. Salley, Harbor Plywood Corp., Hoquiam, Wash. Don S. Coles, W. P. Fuller & Co., 1117 A St., Tacoma 1, Wash. Edwin W. Tibbetts, Brockway-Smith-Haigh-Lovell Co., 465 Medford St.,

Boston, Mass.

LIONEL RAY, Huttig Sash & Door Co., 1206 S. Vandeventer Ave., St. Louis 10, Mo. Don A. Campbell, Bonner Campbell Co., Lebanon, Ky. (Representing National Retail Lumber Dealers' Assn.)

George W. LaPointe, Jr., O. & N. Lumber Co., 620 Main St., Menomonie, Wis. EARL W. MACY, Property Standards Unit, Federal Housing Administration, National Housing Agency, Washington 25, D. C.

Theodore Irving Coe, The American Institute of Architects, The Octagon, 1741 New York Ave., Washington 6, D. C. Nelson J. Morrison, Room 228 Perkins Bldg., Tacoma 2, Wash. (Representing

the American Institute of Architects.)

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.

Commodity Standards Division,
National Bureau of Standards, Washington 25, D. C.
Gentlemen:
We believe that the Commercial Standard CS73-48 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the
production ¹ distribution ¹ purchase ¹
of old growth Douglas fir, Sitka spruce, and Western hemlock standard stock doors.
We reserve the right to depart from it as we deem advisable. We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.
Signature of authorized officer
(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, zone, and State
1 Underscore which one. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade associations.

¹ Underscore which one. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade associations, trade papers, etc., desiring to record their general support, the words "General Support" should be added after the signature.

TO THE ACCEPTOR

The following statements answer the usual questions arising in

connection with the acceptance and its significance:

1. Enforcement.—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

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

bution, or consumption of the article in question.

3. The Department's responsibility.—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. Announcement and promulgation.—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and

publication.

ACCEPTORS

The organizations listed below have individually accepted these grading rules for use as far as practicable in the production, distribution, testing or purchase of Douglas fir, Sitka spruce and Western hemlock standard stock doors. In accepting the standard they reserved the right to depart therefrom as they individually deem advisable. It is expected that articles which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

ASSOCIATIONS

(General Support)

American Specification Institute, Chicago, Ill. Appalachian Hardwood Manufacturers, Inc., Cincimati, Ohio.

Building Officials Conference of America, Washington, D. C.

Consumers Cooperative Association, Kansas City,

MO.
Douglas Fir Plywood Association, Tacoma, Wash.
Fir Door Institute, Tacoma, Wash.
Greater New York Lumber Industries, Inc., New
York, N. Y.
Michigan Retail Lumber Dealers Association, Lan-

sing, Mich. Mississippi Retail Lumber Dealers Association, Inc., Jackson, Miss.

New Jersey Lumbermens Association, Newark, N. J. Manufacturers' Institute,

Prefabricated Home Manufacturers' Institute, Washington, D. C. Southern Sash & Door Jobbers Association, Mem-

Southern Sash & Control of the Park, Tenn.
Wisconsin Retail Lumbermens Association, Milwaukee, Wis.
Woodwork Jobbers Scrvice Bureau, Chicago, Ill.

FIRMS AND OTHER INTERESTS

Acme Door Co., Hoquiam, Wash.
Adams, Franklin O., Tampa, Fla.
Adams & Kelly Co., Omaha, Nebr.
Adams Rogers Co., Indianapolis, Ind.
Allen Millwork Mfg. Co., Shreveport, La.
Alpert Woodworking Corp., Brooklyn. N. Y.
American Sash & Door Co., Kansas City, Mo.
Andrews, Jones, Biscoe & Goodell, Boston, Mass.
Andrews, C. E., Lumber Co., New Bethlehem, Pa.
Asheim & Wilkins, Bridgeport, Conn. (General support) Acme Door Co., Hoquiam, Wash. port.)
Ashton, C. J., Co., Detroit, Mich.
Ashton, C. J., Co., Detroit, Mich.
Athens Lumber Co., Inc., Athens, Ga.
Babin Sash & Door Co., The, Cleveland, Ohio.
Barger Millwork Co., Statesville, N. C.
Barthmaier, Eugene V., Philadelphia, Pa.
Baxter, C. B., & Co., Kansas City, Mo.
Beasley & Sons Co., Nashville, Tenn.
Becker-Danowitz Co., Inc., Maspeth, L. I., N. Y.
Berger, Kelley & Associates, Champaign, Ill.
Berwick Construction & Supply Co., Berwick, Pa.
Binda, Bial & Gerhardt, Union City, N. J.
Binswanger & Co., Columbia, S. C., and Richmond,
Va. port.)

Va.

Birmingham Sash & Door Co., Birmingham, Ala.
Bishop, Horatio W., La Mesa, Calif.
Blackburn, Robert, Inc., Milwaukee, Wis.
Blount Lumber Co., The, Lacona, N. Y.
Boehm, George A., New York, N. Y.
Borland Lumber Co., Oil City, Pa.
Borsman & Casson, Inc., Harrison, N. J.
Bovard, William R., Kansas City, Mo. (General support.)

Brazer Clarence W. New York, N. Y. Va.

Support.;
Brazer, Clarence W., New York, N.Y.
Brew Manufacturing Co., Puyallup, Wash.
Brockway-Smith-Haigh-Lovell Co., Boston, Mass.
Brust, W. G., Seattle, Wash.
Brust & Brust, Milwaukee, Wis.
Bucky, Fred W., Jr., Jacksonville, Fla.

Buell & Co., Dallas, Tex.

Buffalo, City of, Department of Public Works,
Architectural Service, Buffalo, N. Y.

Buffalo Plywood Corp., Buffalo, N. Y.

Buffalo Plywood Corp., Buffalo, N. Y.

Buffalo Lumber & Manufacturing Co., Fort Worth,
Tex., and Tacoma, Wash.

Builders Manufacturing Co., South Bend, Ind.

Building Service, Inc., Great Falls, Mont.

Building Supplies Corp., Norfolk, Va.

Burritt, A. W., Co., The, Bridgeport, Conn.

California Builders Supply Co., Oakland, Calif.

California Builders Supply Co., Oakland, Calif.

California Boor Co., The, Los Angeles, Calif.

Cameron, Lumber Co., Inc., Newburgh, N. Y.

Cameron, Lumber Co., Inc., Waco, Tex.

Cample, J. Thomas, Passaic, N. J.

Camp, E. W., Plywood Co., Inc., Indianapolis, Ind.

Cannon & Mullen, Salt Lake City, Utah.

Cavalier Corp., Chattanooga, Tenn.

Cavanagh Lumber Co., Westerville, Ohio.

Cellar Lumber Co., Westerville, Ohio.

Central Glazing Co., Fort Worth, Tex.

Central Wholesale Co., Inc., Shreveport, La.

Chapin Lumber Co., The, Aurora, Colo.

Charlottesville Lumber Co., Inc., Chicago, Ill.

Va.

Va.
Va.
Chicago & Riverdale Lumber Co., Chicago, Ill.
Chicago & Riverdale Lumber Co., Chicago, Ill.
Cincinnati, City of, Cincinnati, Ohio.
Cincinnati Sash & Door Co., The, Cincinnati, Ohio.
Cleary Millwork Co., Inc., Ansonia, Conn.
Clinger Lumber Co., Milton, Pa.
Coale, Thomas E., Lumber Co., Philadelphia, Pa.
Coffin, R. V., Seattle, Wash.
Collingdale Millwork Co., Collingdale, Pa.
Coms & Cumbings, Binghamton, N. Y.
Cook-Anderson Co., Beaver, Pa.*
Coolidge, Shepley, Bulfinch & Abbott, Boston,
Mass.

Mass.
Corbin, P. & F., Division of American Hardware
Corp., New Britain, Conn.
Cram & Ferguson, Boston, Mass.
Crawford Corp., Baton Rouge, La.
Cresmer Mfg. Co., Riverside, Calif.
Crook & Co., Inc., Chicago, Ill.
Cross. Austin & Ireland Lumber Co., Brooklyn,
N. Y.
Crowell & Langacton, Paggar, Mairo.

N. Y.
Crowell & Lancaster, Bangor, Maine.
Curtis, Ros, Co., Detroit, Mich.
Curtis Co's., Inc., Clinton, Iowa.
Dakota Sash & Door Co., Aberdeen, S. Dak.
D'Arcy Co., Inc., Dover, N. H.
Davidson Sash & Door Co., Inc., Lake Charles, La.
Davis Hardwood Co., San Francisco, Calif.
Dc Jarnette, Charles Wagner, Des Moines, Iowa.
(General support)

General support.)
Derr, Wm. H., Co., Philadelphia, Pa.
Detroit, City of, City Engineer's Office, Detroit,

Dulin Co., The, St. Cloud, Minn.
Dukehart, John K., Portland, Oreg.
Eagle-Picher Sales Co., The, Insulation Division,
Cincinnati, Ohio. (General support.)
Eastern Plywood & Door Co., Inc., Jamestown,

Elliott Bay Mill Co., Seattle, Wash. Emiory Industries, Inc., St. Bernard, Ohio. Empire Millwork Corp., Corona, N. Y. English, Miller & Hockett, Hutchinson, Kans. Erlanson Lumber Co., Superior, Wis.

Estes Lumber Co., Birmingham, Ala. Everett, H. F., & Associates, Allentown, Pa. Exchange Lumber & Manufacturing, Co., Spokane, Lumber & Millwork Co., of Phila., The, Philadel-Lumber Products, Portland, Oreg. Lumbermen's Credit & Warehouse Co., Kalamazoo, Wash. Wash.
Farnham, H. F., Co., Portland, Maine.
Fischer Lime & Cement Co., Memphis, Tenn.
Flannagan, Eric G., Henderson, N. C.
Florida, University of, Gainesville, Fla.
Forks Sash & Door Co., East Grand Forks, Minn.
Fort Smith Sash & Door Co., Fort Smith, Ark.
Fort Wayne Builders Supply, Co., Fort Wayne, Ind.
Frederick Bros., Inc., Pottstown, Pa.
Frost Hardwood Lumber Co., San Diego, Calif.
Fuller, W. P., & Co., Portland, Oreg., and Spokane,
Wash. Mich.
Lumbermen's Supply, Inc., Sacramento, Calif.
Lumdgren Dealers Supply, Inc., Tacoma, Wash.
Lundgren Wholeslae Supply, Inc., Yakima, Wash.
Lyman-Hawkins Lumber Co., Akron, Ohio.
M & M Wood Working Co., Portland, Oreg., and
Miami, Fla. MacArthur Planing Mill, Inc., Long Beach, Calif. Madison Lumber Co., (Dendinger, Inc., owner) New Orleans, La.
Mahoney Sash & Door Co., The, Canton, Ohio.
Markland, M. B., Contracting Co., Atlantic City, General Millwork Corp., Utica, N. Y.
General Paint Corp., Spokane, Wash. (General Marquard Sash & Door Mfg. Co., The, Cleveland, support.) Ohio. Ohio.

Marsh & Truman Lumber Co., Chicago, Ill.

Marshall-Newell Supply Co., San Francisco, Calif.

Martin, Edgar, Chicago, Ill.

Martin Lumber Co., Springfield, Mass.

Maryland Lumber Co., The, Baltimore, Md.

Mason City Millwork Co., Mason City, Iowa.

Mason, George D. & Co., Detroit, Mich.

Mauran, Russell, Crowell & Mullgardt, St. Louis, Support.)
General Sash & Door Co., Tulsa, Okla.
Gibson Door Co., The, Utica, N. Y.
Goshen Sash & Door Co., Goshen, Ind.
Gourley John, & Co., Highland Park, Ill.
Great Lakes Dist. Corp., South Bend, Ind.
Great Lakes Sash & Door Co., The, Cleveland, Onlo.

Greene & Wood, Inc., New Bedford, Mass.
Gulf States Plywood Co., New Orleans, La.
Hager & Cove Lumber Co., Lansing, Mich.
Hannaford, Samuel, & Sons, Cincinnati, Ohio.
Haralson & Mott, Fort Smith, Ark.
Harbor Plywood Corp. of California, San Francisco, Mo. McClelland Co., The, Davenport, Iowa. McGowin-Lyons Hardware & Supply Co., Mobile, McGowin-Lyons Hardware & Supply Co., Mobile, Ala.

McPhillips Manufacturing Co., Inc., Mobile, Ala.

McHose Mill Co., Chicago, Ill.

Memphis Sash & Door Co., Memphis, Tenn.

Merritt Lumber Yards, Inc., Reading, Pa.

Metropolitan Millwork Co., Brooklyn, N. Y.

Michigan Wholesalers, Inc., Jackson, Mich.

Miller & Vrydagh, Terre Haute, Ind.

Minot Builders Supply Co., Minot, N. Dak.

Mooser, William, San Francisco, Calif.

Morgan, David H., Philadelphia, Pa.

Morgan Millwork Co., Baltimore, Md.

Morris, C. L., Lumber Co., Plymouth, Ind.

Morrison-Merrill & Co., Salt Lake City, Utah.

Mulhenberg Bros., Reading, Pa.

Murphy & Ames, Inc., Arlington, Va.

National Plywood Co., Inc., New York, N. Y.

National Woodworks, Inc., Birmingham, Ala.

Neal-Blum Co., Savannah, Ga.

New Home Building Supply Co., Greensboro, N. C.

New Rochelle Coal & Lumber Co., Portland, Oreg.,

and San Francisco, Calif.

Nord E & Co. Inc., Everett Wash Ala. Calif.
Harbor Plywood Corp., Chicago, Ill., Hoquiam, Wash., and Jacksonville, Fla.
Harbor Sales Co., Inc., The, Baltimore, Md., and Washington, D. C.
Harrison-Martin Lumber Co., Grand Island, Nebr. Hartung, F. L., Co., Seattle, Wash.
Hasting, A. W., & Co., Inc., Somerville, Mass.
Havre Builders Supply Co., Havre, Mont.
Hawkins Lumber & Warehouse Co., Boston, Mass.
Havbe, Bissell & Belair, Minneapolis, Minn.
Hill Behan Lumber Co., St. Louis, Mo.
Hodgdon, Charles, & Son, San Gabriel, Calif.
Hoener, P. John, St. Louis, Mo.
Hoffman, Earl, Co., Los Angeles, Calif.
Hogan Lumber Co., Oakland, Calif.
Holsman & Holsman & Klekamp, Chicago, Ill. Holsman & Holsman & Klekamp, Chicago, Ill. Honerkamp, F. W., Co., Inc., Bronx, N. Y. Hope, Frank, San Diego, Calif. Houston Sash & Door Co., Houston, Tex. Huber-Lanctot Housewrecking Corp., Buf Buffalo, N. Y.
Hussey-Williams Co., Inc., Ozone Park, N. Y.
Huttig Sash & Door Co., Charlotte, N. C.; Columbus, Ohio; Dallas, Tex.; Jacksonville, Fla.; Knoxville, Tenn.; Miami, Fla.; Louisville, Ky.; Roanoke, Va.; and St. Louis, Mo.
Hyde-Murphy Co., Ridgway, Pa.
Interior Woodwork Co., Milwaukee, Wis.
Interstate Sash & Door Co., The, Canton, Ohio.
Iron Mountain City Lumber Yard, Iron Mountain, Mich. and San Francisco, Calif.
Nord, E. A., Co., Inc., Everett, Wash.
Northwest Door Co., Tacoma, Wash.
Norwood Sash & Door Manufacturing Co., Cincinnati, Ohio. Nurenburg, W. S., Fort Worth, Tex nati, Ohio.
Nurenburg, W. S., Fort Worth, Tex.
O & N Lumber Co., Menomonie, Wis.
Officer, Gwynn, Lafayette, Calif.
Ohio City Sash & Door Co., Dayton, Ohio.
Oklahoma, University of, Norman, Okla.
Olson, E. C., Lumber Co., Spokane, Wash.
O'Neill Manufacturing Co., Inc., Rome, Ga.
Pacific Mutual Door Co., Garwood, N. J.
Paducah Sash & Door Co., Inc., Paducah, Ky.
Parlmer Lumber Co., Chehalis, Wash.
Parshelsky Bros., Inc., Brooklyn, N. Y.
Patten-Blinn Lumber Co., Los Angeles, Calif.
Pease Woodwork Co., Ine., Cincinnati, Ohio.
Pehrson, G. A., & Associates, Spokane, Wash.
Pepper, Geo. W., Jr., Philadelphia, Pa.
Portsmouth Lumber Corp., Portsmouth, Va.
Progress Lumber Co., Redwood City, Calif.
Quigley, J. R., Co., Gloucester City, N. J.
Radford & Sanders, Inc., Harrisburg, Pa., and
Baltimore, Md.
Ramsey, A. H., & Sons, Inc., Miami, Fla.
Reeb Millwork Corp., Roselle, N. J.
Reid, William H., Jr., Billings, Mont.
Remington Yards, Hibbing, Minn.
Resnikoff, Abraham, New York, N. Y.
Reynolds Lumber Co., New London, Ohio.
Ritchie, James H., & Associates, Boston, Mass. $_{
m Mich}$ Mich.
Ivey, Edwin J., Inc., Seattle, Wash.
Jacksonville Sash & Door Co., Jacksonville, Fla.
Johnson & Wimsatt, Inc., Washington D. C.
Keely, Hal, Plywood Co., Pittsburgh, Pa.
Keich & O'Brien, Warren, Ohio.
Kellogg, Charles C., & Sons., Utica, N. Y.
Kilham, Hopkins & Greeley, Boston, Mass.
Kneeland Bigelow Distributing Co., Bay City,
Mich Mich. Koch Lumber Co., The, Perrysburg, Ohio. Koch Lumber Co., The, Perrysburg, Ohio.
Kornweibel, Theodore, Arcadia, Calif.
Kullberg Mfg. Co., Minneapolis, Minn.
Law, Law, Potter & Nystrom, Madison, Wis.
Leidigh & Havens Lumber Co., Salina, Kans.
Levy, Will, St. Louis, Mo.
Lewis Lumber Co., Spring Lake, N. J.
Liberty Lumber & Mfg. Co., Inc., Erwin, Tenn.
Lock City Mfg. Co., Sault Ste. Marie, Mich.
Loob, Laurence M., White Plains, N. Y.
Loetscher & Burch Manufacturing Co., Des Moines,
Lowa. Los Angeles, City of, Los Angeles, Calif. Lowell, J. B., Inc., Worcester, Mass.

Roberson, A., & Son, Inc., Binghamton, N. Y. Robinson, Fred J., Lumber Co., Detroit, Mich. Rock Island Lumber Co., Teachout Division, Cleve-

Rock Island Lumber Co., Teachout Division, Cleveland, Ohio.
Rockwell Bros. & Co., Houston, Tex.
Rockwell Manufacturing Co., Randolph, Wis.
Rounds & Porter Co., Wichita, Kans.
Royal Oak Wholesale Co., Royal Oak, Mich.
Ruggles, Carlos, Lumber Co., Springfield, Mass.
Rust Sash & Door Co., Kansas City, Mo.
Sanders Bros. Manufacturing Co., Ottawa, Ill.
Sandusky Lumber & Supply, Sandusky, Ohio.
Scherer, Wm. C., & Co., Inc., Baltimore, Md.
Scott Sash & Door Co., Inc., Little Rock, Ark.
Sears, Roebuck & Co., Chicago, Ill.
Segelke & Kohlhaus Co., La Crosse, Wis.
Seneca Lumber & Millwork Co., The, Fostoria,
Ohio.

Ohio. Onio.
Shenk, Henry, Co., Erie, Pa.
Simons, Inc., Minneapolis, Minn.
Simpson Industries, Seattle, Wash.
Smith, Allen A., Co., Toledo, Ohio.
Snedaker, Frank C., & Co., Inc., Philadelphia, Pa.
Snell Sash & Door Co., Omaha, Nebr., and St. Paul,

South Bend Lumber Co., South Bend, Ind. Southwestern Sash & Door Co., Joplin, Mo., and Albuquerque, N. Mex. Standard Door & Lumber Co., Inc., Fort Worth,

Tex.
Standard Millwork & Supply Co., Jackson, Miss.
Staub & Rather, Houston, Tex.
Steves Sash & Door Co., San Antonio, Tex., and
Houston, Tex.
Stotezel, Ralph, Chicago, Ill.
Stokes & Allyn, Portland, Oreg.
Summers Hardware & Supply Co., Johnson City,

Tenn.
Swan Lake Moulding Co., Klamath Falls, Oreg.
Sweetwater Sash & Door Co., Sweetwater, Tex.
Taylor, Ellery K., Haddonfield, N. J.
Taylor, Ellis Wing, Los Angeles, Calif.
Taylor Sash & Door Co., Pensacola, Fla.
Teachout Sash, Door & Glass Co., The, Detroit,

Mich.

Tennessee Glass Co., Inc., Nashville, Tenn. Theiling-Lothman Manufacturing Co., St. Louis,

Throop-Martin Co., The, Columbus, Ohio. Timberline, Inc. (formerly Stark & Co.), Kansas

City, Mo. Trexter Lumber Co., Allentown, Pa. Tucker Products Corp., Fitchburg, Mass. Tulane Hardwood Lumber Co., Inc., New Orleans,

Lia.
Tulsa Rig, Reel & Manufacturing Co., Tulsa, Okla.
Underwood Coal & Supply Co., Mobile, Ala.
Unity Lumber Co., Inc., Brooklyn, N. Y.
Vancouver Door Co., Inc., Montesano, Wash.
Vaughan, Geo. C., & Sons, Houston, Tex., and San Antonio, Tex.

Velde Lumber Co., Pekin, III.
Vetter Manufacturing Co., Stevens Point, Wis.
Virginia Polytechnic Institute, Blacksburg, Va.
(General Support.)
Walling Sash & Door Co., Wichita, Kans.
Wallis & Carley Co., Sharon, Pa.
Walsh, Louis A., Waterbury, Conn.
Wanke Panel Co., Portland, Oreg.
Warren Brothers Co., Nashville, Tenn.
Warren Lumber Co., The, Fort Morgan, Colo.
Washington Door Co., Tacoma, Wash.
Washington Woodworking Co., Inc., Washington, D. C.

D, C.
Watertown Sash & Door Co., Watertown, S. Dak.
Weinel, A. F., Lumber Co., Columbia, Ill.
Welch, Carroll E., Huntington, N. Y.
Welch Sash & Door Co., Port Huron, Mich.
West Kittanning Lumber Co., Kittanning, Pa.
West Lumber Co., Atlanta, Ga.
Western Door & Plywood Corp., Portland, Oreg.
Western Door & Sash Co., Oakland, Calif.
Western Hardwood Lumber Co., Los Angeles, Calif.

Western Hardwood Lumber Co., Los Angeles, Calif. WesternMill & Lumber Co., Inc., Baltimore, Md. Wheeler, Osgood Co., The, Tacoma, Wash. Wheelock, E. U., Inc., Los Angeles, Calif. Whissel, L. N., Lumber Co., Inc., Buffalo, N. Y. Whitmer Jackson Co., Cleveland, Ohio. Whitmer Jackson Co., Inc., The, Buffalo, N. Y. Wholesale Building Supply Inc., Oakland, Calif. Wholesale Distributing Co., Pittsburgh, Pa. Wilbur Lumber Co., Waukesha, Wis. Williams & Hunting Co., Cedar Rapids, Iowa. Willingham-Tift Lumber Co., Atlanta, Ga. Willson, Fred F., Bozeman, Mont. Wimberly & Thomas Hardware Co., Inc., Birmingham, Ala. Western Hardwood Lumber Co., Los Angeles, Calif.

ham, Ala.

Wolverine Shingle & Lumber Co., Detroit, Mich. Wright & Wright, Detroit, Mich. (General su (General sup-

Zimmerman, A. C., Los Angeles, Calif.

UNITED STATES GOVERNMENT

Agriculture, U. S. Department of, Division of Purchase, Sales & Traffic, Washington, D. C. Interior Department, Office of Indian Affairs, Wash-

Interior Department, Office of Indian Affairs, Washington, D. C.
Justice, Department of, Bureau of Prisons, Construction Division, Washington, D. C.
Ninth Naval District, District Public Works Department, Great Lakes, Ill.
Naval Air Station, Alameda, Calif.
Naval Base, Philadelphia, Pa.
Navy, Department of the, Bureau of Yards & Docks, Washington, D. C.
Portsmouth Naval Shipyard, Portsmouth, N. H.
Public Housing Administration, Washington, D. C.

Public Housing Administration, Washington, D. C., and Chicago, Ill.
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Division, National Bureau of Standards, Washington 25, D. C.

1 Where "(E)" precedes the CS number, it indicates an emergency commercial standard, drafted under war conditions with a view toward early revision.

