

**PRODUCT STANDARD (PS) 4-66
STANDARD STOCK LIGHT- Duty 1 3/8- AND 1 3/4 INCH
THICK FLUSH-TYPE INTERIOR STEEL DOORS AND FRAMES**

Product Standard PS4-66 (supersedes Commercial Standard cs211-57), Standard Stock Light-duty 1 3/8- and 1 3/4 -Inch Thin Flush-Type Interior Steel Doors and Frames was withdrawn by the department of Commerce on August 18, 1980.

For assistance on other standards-related information contact:

Steel Door Institute (SDI)
A.P. Wherry and Associates, Inc.
30200 Detroit Road
Cleveland, Ohio 44145-1967
Telephone: 440.899.0010
Fax: 440.892.1404

s.d.(2) of the OMB Circular that the meeting will be concerned with matters of the type described in 5-U.S.C. 552(b)(1). This determination was made pursuant to a delegation of authority from the Office of Management and Budget dated June 23, 1973, issued under the authority of Executive Order 11666 dated October 7, 1972 and continued by Executive Order 11769 dated February 21, 1974.

Dated: August 14, 1980.

Walter L. Baumann,
Acting Advisory Committee, Management
Officer.

[FR Doc. 80-23236 Filed 8-14-80; 6:45 am]
BILLING CODE 6325-02-01

CIVIL AERONAUTICS BOARD

[Docket 34141]

Application of Trans-Panama, S.A.;
Hearing

Notice is hereby given pursuant to the Federal Aviation Act of 1958, as amended, that a hearing in the above-entitled proceeding is assigned to be held on October 7, 1980, at 9:30 a.m. (local time), in Room 1003, Hearing Room A, North Universal Building, 1675 Connecticut Avenue, N.W., Washington, D.C., before the undersigned administrative law judge.

Dated at Washington, D.C., August 14, 1980.

Elias C. Rodriguez,
Administrative Law Judge.

[FR Doc. 80-23231 Filed 8-14-80; 6:45 am]
BILLING CODE 6325-01-01

DEPARTMENT OF COMMERCE

Maritime Administration

National Oceanic and Atmospheric
Administration

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Merchant Marine and Fisheries Capital
Construction Funds; Applicable Rates
of Interest on Nonqualified
Withdrawals

Under the authority in section 607(h)(4) of the Merchant Marine Act, 1936, (46 U.S.C. 1101), as amended by section 21 of the Merchant Marine Act of 1970 (84 Stat. 1031), we hereby determine and announce that the applicable rate of interest on the amount of additional tax attributable to any nonqualified withdrawals from a capital

construction fund established under section 607 of the Act shall be 10.36 percent, with respect to nonqualified withdrawals made in the taxable year beginning in 1980.

The determination of the applicable rate of interest with respect to nonqualified withdrawals was computed according to the joint regulations issued under the Act (46 CFR Part 391.7(e)(2)(ii)) by multiplying 8 percent by the ratio which (a) the average yield on 5-year Treasury securities for the calendar year immediately preceding the beginning of such taxable year, bears to (b) the average yield on 5-year Treasury securities for the calendar year 1970. The applicable rate so determined was computed to the nearest one-hundredth of 1 percent.

Dated: August 11, 1980.

Sammuel B. Nemirow,
Assistant Secretary for Maritime Affairs.

Richard A. Frank,
Administrator, National Oceanic and
Atmospheric Administration.

Donald C. Lubick,
Assistant Secretary of the Treasury.

[FR Doc. 80-24104 Filed 8-14-80; 6:45 am]
BILLING CODE 2610-16-01

DEPARTMENT OF COMMERCE

International Trade Administration

Consolidated Decision on Applications
for Duty-Free Entry of Scientific
Articles

Correction

In FR Doc. 80-24104, at page 53182, in the issue of Monday, August 11, 1980, on page 53183 in the middle column, the sixth full paragraph now reading "Docket No.: 79-00062." is corrected to read "Docket No.: 80-00062."
BILLING CODE 1995-01-01

National Bureau of Standards

Status Report on Withdrawal of
Voluntary Product Standards

AGENCY: Department of Commerce,
National Bureau of Standards.

ACTION: Maintenance, Retention,
Replacement, and Withdrawal of certain
Voluntary Product Standards.

On June 18, 1980, the Department of Commerce (Department) announced in the Federal Register (45 FR 41475-6) the withdrawal, effective August 18, 1980, of 80 documents classified as Voluntary Product Standards. The withdrawal announcement was made in accordance with a revisions to the Procedures for

the Development of Voluntary Product Standards (15 CFR Part 10) which was announced in a separate notice in that same issue of the Federal Register (45 FR 41401-06) and which went into effect on June 12, 1980. The revised Procedures specify six criteria which must be met for the department to sponsor the development or maintenance of a standard. Section 10.13 of the revised Procedures provided that within the period ending August 18, 1980, interested parties could submit a request to the director of the National Bureau of Standards (NBS) to retain a particular standard or standards in accordance with those specified criteria. Several such requests have been received, and determinations have been reached on those requests as indicated below.

Based on proposals from the proponent organizations identified after the following titles, the following product standards will continue to be sponsored by the Department:

PS 1-74, Construction and Industrial Plywood; American Plywood Association
PS 20-70, American softwood Lumber Standard; American Lumber Standards Committee
PS 56-73, Structural Glued Laminated Timber; American Institute of Timber Construction
PS 73-77, Carbonated Soft Drink Bottles; Glass Packaging Institute

Based on documented activity within a private standards-writing organization, the following standards will be retained by NBS for the stated periods of time to permit the orderly transfer of sponsorship of such standards from the Department to the identified organizations:

PS 13-69 Uncoiled Slab Urethane Foam for Bedding and Furniture cushioning; American Society for Testing and Materials; 24 months
PS 15-69, Custom Contact-Molded Reinforced-Polyester Chemical-Resistant Process Equipment; Society of the Plastics Industry; 12 months
PS 17-69, Polyethylene sheeting (construction, industrial, and agricultural Applications); Society of the Plastics Industry; 12 months
PS 23-70, Horticultural Grade Perlite; the Perlite Institute; 12 months
PS 24-70, Melamine Dinnerware (Alpha-Cellulose Filled) for Household Use; Society of the Plastics Industry; 12 months
PS 25-70, Heavy-Duty Alpha-Cellulose-Filled Melamine Tableware; Society of the Plastics Industry; 12 months
PS 27-70, Mosaic-Parquet Hardwood Slat Flooring; American Parquet Association; 6 months
PS 29-70, Plastic Heat-Shrinkable Film; Society of the Plastics Industry; 12 months
PS 30-70, School Chalk; the Crayon, Water Color and Craft Institute, Inc.; 18 months
PS 31-70, Polystyrene Plastic Sheet; Society of the Plastics Industry; 12 months

- PS 34-70, Fluorinated Ethylene-Propylene (FEP) Plastic Lined Steel Pipe and Fittings; Society of the Plastics Industry; 12 months
- PS 36-70, Body Measurements for the Sizing of Boys' Apparel; Mail Order Association of America; 24 months
- PS 42-70, Body Measurements for the Sizing of Women's Patterns and Apparel; Mail Order Association of America; 24 months
- PS 45-71, Body Measurements for the Sizing of Apparel for Young Men (Students); Mail Order Association of America; 24 months
- PS 46-71, Flame-Resistant Paper and Paperboard; American Society for Testing and Materials; 18 months
- PS 51-71, Hardwood and Decorative Plywood; Hardwood Plywood Manufacturers Association; 24 months
- PS 52-71, Polytetrafluoroethylene (PTFE) Plastic; Society of the Plastics Industry; 12 months
- PS 53-72, Glass-Fiber Reinforced Polyester Structural Plastic Panels; Society of the Plastics Industry; 12 months
- PS 54-72, Body Measurements for the Sizing of Girls' Apparel; Mail Order Association of America; 24 months
- PS 57-73, Cellulosic Fiber Insulation Board; American Hardboard Association; 6 months
- PS 58-73, Basic Hardboard; American Hardboard Association; 6 months
- PS 59-73, Prefinished Hardboard Paneling; American Hardboard Association; 6 months
- PS 60-73, Hardboard Siding; American Hardboard Association; 6 months
- PS 62-74, Grading of Diamond Powder in Sub-Sieve Sizes; Industrial Diamond Association of America; 12 months
- PS 63-75, Latex Foam Mattresses for Hospitals; American Society for Testing and Materials; 24 months
- PS 64-75, School Paste; The Crayon, Water Color and Craft Institute, Inc.; 18 months
- PS 65-75, Paints and Inks for Art Education in Schools; The Crayon, Water Color and Craft Institute, Inc.; 18 months
- PS 67-76, Marking of Gold Filled and Rolled Gold Plate Articles Other Than Watchcases; Jewelers Vigilance Committee; 36 months
- PS 68-76, Marking of Articles Made of Silver in Combination with Gold; Jewelers Vigilance Committee; 36 months
- PS 69-76, Marking of Articles Made Wholly or in Part of Platinum; Jewelers Vigilance Committee; 36 months
- PS 70-76, Marking of Articles Made of Karat Gold; Jewelers Vigilance Committee; 36 months
- PS 71-76, Marking of Jewelry and Novelties of Silver; Jewelers Vigilance Committee; 36 months
- CS 68-62, Artists' Oil Paints; Artists Equity Association, Inc.; 18 months
- CS 130-60, Color Materials for Art Education in Schools; The Crayon, Water Color and Craft Institute, Inc.; 18 months
- CS 136-65, Insect Wire Screening; Insect Screening Weave Association; 12 months
- CS 151-60, Body Measurements for the Sizing of Apparel for Infants, Babies, Toddlers and Children (for the Knit Underwear Industry); Mail Order Association of America; 24 months
- CS 162-63, General Purpose Vinyl Plastic Film; Society of the Plastics Industry; 12 months
- CS 201-65, Rigid Polyvinyl Chloride Sheets; Society of the Plastics Industry; 12 months
- CS 227-66, Polyethylene Film; Society of the Plastics Industry; 12 months
- CS 245-62, Vinyl-Metal Laminates; Society of the Plastics Industry; 12 months
- CS 257-63, TFE-Fluorocarbon (Polytetrafluoroethylene) Resin Molded Basic Shapes; Society of the Plastics Industry; 12 months
- CS 266-65, Hide Trim Pattern for Domestic Catleholders; National Hide Association; 12 months
- CS 274-66, TFE-Fluorocarbon (Polytetrafluoroethylene) Resin Sintered Thin Coatings for Dry Film Lubrication; Society of the Plastics Industry; 12 months
- R 2-62, Bedding Products and Components; National Association of Bedding Manufacturers; 12 months
- R 192-63, Crayons and Related Art Materials for School Use (Types, Sizes, Packages, and Colors); The Crayon, Water Color and Craft Institute, Inc.; 18 months
- The following standards have been replaced by standards published by private standards-writing organizations and, therefore, Department of Commerce sponsorship is no longer needed for them:
- PS 26-70, Rigid Poly (Vinyl Chloride) (PVC) Profile Extrusions replaced by ASTM D 3678-78, Specification for Rigid Poly (Vinyl Chloride) (PVC) Profile Extrusions
- PS 43-71, Fluorinated Ethylene-Propylene (FEP) Plastic Tubing replaced by ASTM D 3293-74, Specification for FEP-Fluorocarbon Resin Tubing
- PS 47-71, Heat-Shrinkable Fluorocarbon Plastic Tubing replaced by ASTM D 2902-75, Specification for Fluorocarbon Resin Heat-Shrinkable Tubing
- PS 55-72, Rigid Poly (Vinyl Chloride) (PVC) Plastic Siding replaced by ASTM D 3679-79, Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding
- CS 11-63, Moisture Regain of Cotton Yarns replaced by ASTM D 1909-77 Standard Table of Commercial Moisture Regains for Textile Fibers and ASTM D 2464-74 Standard Method of Test for Commercial Weight of a Shipment of Yarn or Man-Made Staple Fiber
- CS 21-68, Interchangeable Taper-Ground Joints, Stopcocks, Stoppers, and Spherical-Ground Joints replaced by ASTM E 678-79 Standard Specification for Interchangeable Stopcocks and Stoppers, ASTM E 676-79 Standard Specification for Interchangeable Taper-Ground Joints, and ASTM E 677-79 Standard Specification for Interchangeable Spherical-Ground Joints
- CS 75-66, Automatic Mechanical-Draft Oil Burners Designed for Domestic Installations replaced by ANSI Z 81.2-1976 Performance Requirements for Automatic Pressure Atomizing Oil Burners of the Mechanical-Draft Type
- CS 181-63, Flammability of Clothing Textiles replaced by ASTM D 1230-61 (1972) Test for Flammability of Clothing Textiles
- CS 202-66, Industrial Lifts and Hinged Loading Ramps replaced by ANSI MH14.1-1978 Industrial Loading Dockboards (Ramps)
- CS 209-67, Vinyl Chloride Plastics Garden Hose replaced by ASTM D 3901-80 Standard Consumer Product Specification for Garden Hose
- CS 236-66, Mat-Formed Wood Particleboard replaced by ANSI A 208.1-1979 Mat-Formed Particleboard
- In the absence of any request for retention or maintenance, the following standards will be withdrawn, as previously announced, on August 18, 1980:
- PS 4-66, Standard Stock Light-Duty 1-3/8- and 1-3/4-Inch Thick Flush-type Interior Steel Doors and Frames
- PS 6-66, Trim for Water-Closet Bowls, Tanks and Urinals (Dimensional Standards)
- PS 23-70, Glass Stopcocks with Polytetrafluoroethylene (PTFE) Plugs
- PS 38-70, Steel Bi-fold Closet Door Units, Frames, and Trim
- PS 40-70, Package Quantities of Green Olives
- PS 41-70, Package Quantities of Instant Mashed Potatoes
- PS 44-71, Paper Ice Bag Sizes
- PS 46-71, Package Quantities of Cubed, Sliced, Crushed, and Block Ice
- PS 49-71, Portable Picnic Coolers
- PS 60-71, Package Quantities of Toothpaste
- CS 5-65, Pipe Nipples; Brass, Copper, Steel, and Wrought Iron
- CS 46-66, Hosiery Lengths and Sizes Excluding Women's
- CS 234-61, Measurements for Stretch Socks and Anklets
- CS 243-62, Standard Stock Commercial 1-3/4-Inch Thick Steel Doors and Frames
- CS 209-65, Aluminum Alloy Chain Link Fencing
- R 46-55, Tissue Wrapping Paper
- R 222-46, Hot-Rolled Carbon Steel Bars and Bar-Size Shapes
- R 264-61, Standard Sizes of Oil-Hardenable Flat Ground Tool Steel Stock
- In accordance with section 10.1(e) of the revised Procedures for the Development of Voluntary Product Standards and by agreement with the Consumer Product Safety Commission, the Department will retain sponsorship of the following two Product Standards until such time as arrangements for their sponsorship by a private standards-writing organization can be made:
- PS 66-75, Safety Requirements for Home Playground Equipment
- PS 72-76, Toy Safety
- For further information contact: James E. French, Office of Engineering Standards, National Bureau of Standards, Washington, D.C. 20234, Telephone: (301) 821-3272.



PRODUCT STANDARD PS 4-66

(Supersedes Commercial Standard CS211-57)

Standard Stock Light-Duty 1³/₈- and 1³/₄-Inch Thick Flush-Type Interior Steel Doors and Frames

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Alexander B. Trowbridge, Acting Secretary

NATIONAL BUREAU OF STANDARDS

A. V. Astin, Director

Office of Engineering Standards Services

EFFECTIVE DATE

Having been passed through the regular procedures of the Office of Commodity Standards (now the Product Standards Section, Office of Engineering Standards Services) and approved by the acceptors hereinafter listed, this Product Standard is issued by the National Bureau of Standards, effective November 1, 1966.

A. V. ASTIN, *Director.*

PRODUCT STANDARDS

Product Standards are developed by manufacturers, distributors, and users in cooperation with the Office of Engineering Standards Services of the National Bureau of Standards. The purpose of a Product Standard may be either (1) to establish standards of practice for sizes, dimensions, varieties, or other characteristics of a specific product; or (2) to establish quality criteria, standard methods of testing, rating, certifying, and labeling of the manufactured products.

The adoption and use of a Product Standard is voluntary. However, when reference to a Product Standard is made in contracts, labels, invoices, or advertising literature, the provisions of the standard are enforceable through usual legal channels as a part of the sales contract.

A Product Standard usually originates with a proponent industry. The sponsors may be manufacturers, distributors, or users of the specific product. One of these three elements of industry submits to the Office of Engineering Standards Services, the necessary data to be used as the basis for developing a standard of practice. The Office, by means of assembled conferences or letter referenda, or both, assists the sponsor group in arriving at a tentative standard of practice and thereafter refers it to the other elements of the same industry for approval or for constructive criticism that will be helpful in making any necessary adjustments. The regular procedures of the Office assures continuous servicing of each Product Standard through review and revision whenever, in the opinion of the industry, changing conditions warrant such action.

The initial printing of PS4-66 was made possible through the cooperation of the Steel Door Institute.

STANDARD STOCK LIGHT-DUTY 1³/₈- AND 1³/₄-INCH THICK FLUSH-TYPE INTERIOR STEEL DOORS AND FRAMES

(Effective November 1, 1966)

1. PURPOSE

1.1 The purpose of this Product Standard is to establish nationally recognized sizes and construction requirements for light-duty steel doors 1³/₈- and 1³/₄ inches thick, together with frames and accessories.¹ It is intended that this standard shall provide a basis for common understanding among producers, distributors, architects, builders, and other elements of the industry, as well as effect economies in the manufacture, marketing, and utilization of the product covered.

2. SCOPE

2.1 This Product Standard covers sizes, types, materials, construction, hardware installation, and finishing of the doors, frames, and accessories. They are intended to be stock items for use in light-duty applications where low cost flush doors are desired. The standard also provides a uniform method of marking, identifying, and labeling.²

2.2 It is intended that approval drawings will not be required for these stock items and that the manufacturers' published details, together with this standard will provide all needed information. However, approval drawings may be specified or provided when desired.

3. STANDARD SIZES

3.1 **Opening sizes.**—Doors and frames shall conform to the standard opening sizes given in Table 1.

3.1.1 **Method of measuring opening.**—

3.1.1.1 **Width.**—The width of opening shall be measured from inside to inside of frame jamb rabbets. For example the width shall be 24 inches for a 2-foot opening, and 28 inches for a 2-foot 4-inch opening.

3.1.1.2 **Height.**—Height of opening shall be measured from the lower end of the jamb to the head rabbet on the frame. The height shall be 80 inches for a 6-foot 8-inch frame, 84 inches for a 7-foot frame, and 86 inches for a 7-foot 2-inch frame.

3.2 **Door sizes.**—Doors shall be sized so as to fit the standard opening sizes (Table 1) and allow a one-eighth-inch clearance at jambs and head of frame. This is considered to be a nominal clearance, subject to ordinary commercial variations. A clearance

¹ It should be noted that this standard does not apply to steel doors covered by Commercial Standard CS242-62, Standard Stock Commercial 1³/₄-Inch Thick Steel Doors and Frames, nor metal clad doors (Kalamain wood metal covered), nor industrial doors of the single sheet panel type.

² Provisions for the erection of doors, frames and accessories are not included in the standard but certain recommendations for storage and erection as generally endorsed by the manufacturers are given for information and guidance (see Appendix A).

TABLE 1.—Standard opening sizes ^a

Width of opening	1¾-Inch thick doors—height of opening			1¾-Inch thick doors—height of opening		
2' 0"	6' 8"	7' 0"	7' 2"	6' 0"	7' 0"	7' 2"
2' 4"	6' 8"	7' 0"	7' 2"	6' 8"	7' 0"	7' 2"
2' 6"	6' 8"	7' 0"	7' 2"	6' 8"	7' 0"	7' 2"
2' 8"	6' 8"	7' 0"	7' 2"	6' 8"	7' 0"	7' 2"
3' 0"	6' 8"	7' 0"	7' 2"	6' 8"	7' 0"	7' 2"
3' 4"	-----	-----	-----	6' 8"	7' 0"	7' 2"
3' 6"	-----	-----	-----	6' 8"	7' 0"	7' 2"
3' 8"	-----	-----	-----	6' 8"	7' 0"	7' 2"
4' 0"	-----	-----	-----	6' 8"	7' 0"	7' 2"

^a Sizes shown are for single doors only, for pairs of doors use twice the width indicated.

of not more than three-quarters inch shall be allowed between the bottom of the door and the lower end of the jamb.

4. REQUIREMENTS

4.1 **Material.**—Steel, either cold rolled or hot rolled, pickled and oiled, shall be used in these doors, and may be electrolytic zinc coated and phosphatized.

4.1.1 **Thickness.**—The thickness of the steel door components shall meet the minimum requirements established in Table 2.

TABLE 2.—Thickness of steel for component parts

Item	Minimum gage of sheet metal	
	Gage ^a number	Equivalent gage thickness
Frames, 1½-in. thick doors.....	18	<i>Inch</i> 0. 0478
Frames, 1¾-in. thick doors.....	16	. 0598
Stiles for doors.....	20	. 0359
Panels for doors.....	20	. 0359
Lock reinforcement.....	16	. 0598
Strike reinforcement.....	^b 18	. 0478
Hinge reinforcements, 1½-in. thick doors.....	^c 12	. 1046
Hinge reinforcements, 1¾-in. thick doors.....	^c 10	. 1345
Closer reinforcements.....	12	. 1046
Doors-composite construction (see 4.2.1.2):		
Perimeter channel.....	18	. 0478
Surface sheets.....	^d 20	. 0359

^a The gage numbers are from the Manufacturers Standard Gage for Steel Sheets, published in the latest issue of the Steel Products Manual for Carbon Steel Sheets of the American Iron and Steel Institute. Copies of the Steel Products Manual are obtainable from the American Iron and Steel Institute, 150 East Forty-Second Street, New York, N. Y. 10017.

^b Lighter gages may be used if suitable extruded tapped screw holes are provided so that equivalent holding strength is obtained.

^c Lighter gages may be used if suitable extruded tapped screw holes are provided, and if the reinforcement is formed to a channel-shape and/or a U-shape that provides rigidity equivalent to that of flat reinforcements of specified minimum thickness.

^d 22 gage may be used for solid structural mineral core only (such as hydrous calcium silicate—20 pound density). For all others use 20 gage.

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4.2 Door types, designs, and constructions.—Doors shall be either the flush type, or flush panel type, as described in succeeding paragraphs. The designs of the door are not covered by this standard. However, it is intended that the designs and constructions shall be those consistently employed in the manufacture of the product as offered and furnished to the trade. Doors shall be provided with sound absorbing material to deaden the metallic sound. Such designs and constructions shall include suitable methods of stiffening where the type of stiffening to be used is not described.

4.2.1 Flush type.—Flush type doors shall be of either the hollow steel construction or the composite metal face construction specified below.

4.2.1.1 Hollow steel construction.—Each face of the doors shall be formed from a sheet of metal, the thickness of which shall be in accordance with Table 2. Longitudinal joints shall be welded and dressed or filled, or be internally welded. When internally welded the visible joint at the top and bottom of the door may be either welded flush, or be closed with recessed spot welded channel or plastic end closers. Doors shall be stiffened. See paragraph 4.2.

4.2.1.2 Composite metal face construction.—Cores shall be made of suitable solid structural mineral, fibrous materials, honeycomb material, plastic material, or other similar material so as to provide adequate support for surface sheets, and may be surrounded by a perimeter channel as specified in Table 2. Suitable reinforcement for application of the hardware as specified herein shall be provided. Surface sheets for doors shall consist of steel sheets of thicknesses as specified in Table 2 of stretcher leveled degree of flatness.

Surface sheets shall be bonded under pressure to the core by means of a waterproof resorcinol adhesive or equivalent, and shall also be welded to the perimeter channel, if used, around all four edges of the door. The welding on both longitudinal edges of door shall be dressed or filled to make welds invisible.

4.2.2 Flush-panel-type doors.—Flush-panel-type doors shall be made only of hollow steel of stile and panel construction. Stiles shall be butted against the panels the full length of the door, and be horizontally stiffened with U-shaped end closers. Panels shall interlock with the stiles, or be joined to the stiles by internal welding, and shall be stiffened. (See 4.2.) Surfaces of panels and stiles shall lie in parallel planes, but panels may be recessed an amount no greater than the thickness of the stile metal.

4.3 Frames.—Frames shall be either knockdown type or welded type.

4.3.1 Knockdown Type.—Knockdown frames shall have joints that interlock rigidly when locked in place, so as to maintain alignment of parts and provide functionally satisfactory performance of complete frames when field assembled. Knockdown frames shall be shipped unassembled. Spreaders are not required.

4.3.2 Welded type.—The headers and jambs of welded frames shall be secured at the corners either by internal welding of faces or by welded splice plates. Joints at jambs and headers shall be further secured at the webs either by welding or by mechanical interlock. Faces of frames at junction of head and jamb shall present neat line

joints. Frames of welded unit construction shall be strapped together in pairs with the head of one frame inverted for bracing during shipment. An alternate method may be to have temporary steel spreaders securely fastened to the bottom of each frame.

4.3.3 Anchors.—Frames shall be provided with not less than three anchors per jamb, the anchors being as required for the adjoining wall construction. The design of anchors shall be in accordance with each manufacturer's regular practice, and they shall be of not less than 0.0478 inch thick. All frames shall be provided with an anchor at the base of each jamb for fastening to the floor or wall construction.

4.4 Preparation of doors and frames for hardware.—Doors and frames shall be mortised so as to be fully prepared for locks and strikes, as specified in the following sub-paragraphs. Location of hinges shall be as established by individual manufacturers. This standard does not cover preparation for surface applied hardware (other than reinforcement) which is normally installed as a field operation by others. Strike and hinge reinforcements prepared for screws shall be protected by mortar guards securely fastened inside the frame when specified.

4.4.1 Lock sets.—Mounting and location of locks shall be in accordance with the latest edition of American Standard Specification for (Metal) Door and Frame Preparation for Door Locks and Flush Bolts, A115.³ or an acceptable alternate as follows:

(a) All 1 $\frac{3}{8}$ -inch doors shall be prepared for locksets in accordance with ASA A115.3 with a latch front dimension of 1 inch.

(b) Frames for 1 $\frac{3}{8}$ -inch doors shall be prepared for strikes in accordance with ASA A115.3.

(c) All 1 $\frac{3}{4}$ -inch doors shall be provided with either cylindrical or mortise lock preparations in accordance with ASA A115.1 or ASA A115.2.

(d) Frames for 1 $\frac{3}{4}$ -inch doors shall be prepared for strikes in accordance with ASA A115.1 or A115.2.

(e) Acceptable alternate lock preparations for doors are as follows:

1. Mortise integral type locks (alternates for 1 $\frac{3}{4}$ -inch doors)—Preparation shall conform to Series 140 of the latest issue of Federal Specification FF-H-106.⁴

2. Mortise unit type locks (Alternates for 1 $\frac{3}{8}$ - and 1 $\frac{3}{4}$ -inch doors)—Preparation shall conform to Series 90 of the latest issue of Federal Specification FF-H-106.

3. Cylindrical locks (alternates for 1 $\frac{3}{8}$ -inch doors)—Preparation shall be according to ASA A115.3 with the backset dimension 2 $\frac{3}{4}$ inches instead of 2 $\frac{3}{8}$ inches and a latch front of 1 $\frac{1}{8}$ inch width instead of 1-inch.

4. Cylindrical locks (alternates for 1 $\frac{3}{8}$ -inch doors)—Prepa-

³ Available from the American Standards Association, Inc., 10 East 40th Street, New York, N.Y. 10016.

⁴ Copies of Federal Specification FF-H-106, Hardware, Builders' Locks and Door Trim, may be obtained from the Specifications Activity, Printed Materials Supply Division, Building 197, Naval Weapons Plant, Washington, D.C. 20407.

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ration according to ASA A115.3 with the backset dimension $2\frac{3}{4}$ inches instead of $2\frac{3}{8}$ inches and a latch front of 1-inch width.

4.4.2 **Hinges.**—(a) All doors $1\frac{3}{8}$ inches thick and 6'8" high and frames, shall be prepared for one pair of $3\frac{1}{2}$ -inch by $3\frac{1}{2}$ -inch hinges, and all 7' and 7'2" high doors and frames shall be prepared for $1\frac{1}{2}$ pairs of $3\frac{1}{2}$ - by $3\frac{1}{2}$ -inch standard weight steel (0.123) hinges. Leaves shall be 0.123 inch thick and shall be screwed to doors, and may be either welded or screwed to frames. Hole pattern of the hinges shall be in accordance with the latest edition of Commercial Standard CS9.⁵ All hinges which are screw applied shall be attached in the field by others.

(b) All $1\frac{3}{4}$ -inch doors and frames shall be prepared for $1\frac{1}{2}$ pairs of $4\frac{1}{2}$ -inch high standard-weight steel hinges. Leaves shall be 0.134 inch thick for application by screws to both doors and frames in the field by others.

4.5 **Universal hanging.**—The doors covered by this specification may be made for universal hanging by having hinge mortises the full thickness of the door. Where doors are so prepared, fillers shall be furnished with the door to fill the space from the back edge of the hinge to the opposite face of the stile in accordance with the door manufacturers' standard practice. Mortise reinforcements, when specified, shall be concealed and be designed and constructed so as to develop the necessary strength to support the attached units in a suitable manner. Thickness of reinforcements shall be in accordance with Table 2.

4.6 **Finishing.**—All doors and frames shall be chemically treated for good paint adhesion and all visible surfaces shall be finished with high quality metal primer, either air dried or baked on.

4.7 **Workmanship.**—All doors and frames identified as being in accordance with this Product Standard shall be of good workmanship and free from any defects not permitted in this standard.

5. IDENTIFICATION

5.1 **Labels and Literature.**—In order that the purchasers may be assured that the products actually comply with all the requirements of this Product Standard it is recommended that manufacturers include the following statement in conjunction with their name and address on labels, invoices, sales literature, etc.:

This Light-Duty $1\frac{3}{8}$ (or $1\frac{3}{4}$) Inch Thick Flush-Type Interior Steel Door (or Frame) complies with Product Standard PS4-66 as developed under the Product Standards Procedures of the Office of Engineering Standards Services, and published by the National Bureau of Standards.

5.1.1 The following abbreviated statement is suggested when available space on labels is insufficient for the full statement:

Complies with PS4-66, published by the National Bureau of Standards.

⁵ Copies of Commercial Standard CS9-65 Builders' Template Hardware may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

5.2 Marking of door and frame.—Each door and frame marked as complying with the requirements of this Product Standard shall be marked with all of the following information:

- (1) The manufacturer's name and address or his readily recognized trade mark or brand.
- (2) Full symbol of this Product Standard, PS4-66.

6. FIRE DOORS AND FRAMES

6.1 Fire Doors and Frames.—Fire resistance requirements and test methods are not covered by this Standard. Doors and frames complying with this standard may have their fire protection ratings measured by any nationally recognized testing agency that has the necessary equipment and personnel to fire test door assemblies in accordance with standard Methods of Fire Test of Door Assemblies, ASTM Designation E152-58 (ASA-A2.2-1960).

Labels attached to doors and frames by recognized testing agencies attest to their fire protection characteristics and do not necessarily indicate compliance with the provisions of this standard. Doors and frames so labeled may be accompanied by a certificate as recommended in paragraph 5.1 or 5.1.1, provided they meet the requirements of this standard in all respects.

APPENDIX A

MANUFACTURERS' RECOMMENDATIONS FOR STORAGE AND ERECTION

The following practices are recommended by the manufacturers. Doors and frames should be stored at the site on wood sills or on dry floors in a manner that will prevent rust and damage.

Frames should be installed plumb, rigid, and in true alignment, and be fastened so as to retain their position and clearance during construction of partitions. Frames in masonry walls should be filled with mortar as the wall is laid up. Frames in solid plaster or steel stud walls should be completely filled with plaster.

Frames that are to be filled with mortar containing an antifreeze ingredient should first be protected from corrosion by a field application of asphalt emulsion or other suitable rust inhibitor.

HISTORY OF PROJECT

On July 7, 1954, the Steel Door Institute representing manufacturers of interior steel doors and frames, requested the Commodity Standards Division, Office of Technical Services, to assist the industry in establishing a Commercial Standard for flush-type interior steel doors and frames, and submitted specifications as a basis for the proposed standard.

After the recommended standard was circulated to the industry on March 4, 1955, for acceptance a number of comments and suggestions for changes were received. The Institute's Technical Committee, after reviewing and considering the comments at length, recommended that some of the suggested changes be incorporated into the standard. A

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new draft which included the changes was circulated for consideration. The response from firms and others concerned accepting the standard was estimated to represent a satisfactory majority of the production volume and a sufficient cross section of the industry to insure successful application of the standard. Accordingly, it was announced on July 15, 1957, that the standard had been approved for promulgation as CS211-57 Flush-Type Interior Steel Doors and Frames, and would be effective from August 15, 1957.

Current Revision.—The revision of CS211-57 was initiated by the Steel Door Institute on May 3, 1963, by requesting the Office of Commodity Standards (now Product Standards Section, Office of Engineering Standards Services) for their cooperation in the preparation of a preliminary draft for industry review. A proposed revision was circulated on August 22, 1963, to a cross-section of the industry for comment to help determine if it would be acceptable to the industry as a whole. As a result of the comments received, certain editorial and minor technical changes were embodied in a second draft of the standard. On August 18, 1964, copies of the recommended revision were circulated to producers, distributors, users, laboratories, builders, architects, and Government agencies for consideration and acceptance. Sufficient acceptances were received from producers, distributors, users, and others interested in this project to insure the successful application of the standard, but some comments were received which resulted in editorial changes. Accordingly, on September 27, 1966, the new edition of the standard, Product Standard PS4-66, was announced to become effective November 1, 1966.

Project Manager: C. G. Hemmer, Office of Engineering Standards Services, National Bureau of Standards.

STANDING COMMITTEE

The following individuals comprise the membership of the Standing Committee which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or the Product Standards Section, Office of Engineering Standards Services, National Bureau of Standards, which acts as Secretary of the committee.

STANDING COMMITTEE

FOR

PRODUCT STANDARD PS 4-66

STANDARD STOCK LIGHT-DUTY 1³/₈ and 1³/₄ INCH THICK FLUSH-TYPE INTERIOR STEEL DOORS AND FRAMES

Representing Producers:

Carl B. Frank, Fenestra Inc., 4070 West 20th Street, Erie, Pa. (Chairman)

V. C. Braun, Amweld Building Products, 100 Plant Street, Niles, Ohio 44446

T. W. Henderson, Republic Steel Corp., Manufacturing Division, 1315 Albert Street, Youngstown, Ohio 44505

Martin Sklar, K-D Frame & Door Corp., 59-50 54th Street, Maspeth, N.Y. 11378

Representing Distributors:

- Robert H. Erskine, Peter Vredenburg Hardware Co., 229 E. Jefferson Street, Springfield, Ill. 62706
- George A. Holmes, President, Ideal Building Materials, Inc., P.O. Box 3923, 2460 Midway Street, Shreveport, La. 77102
- Sidney R. Peachy, Central Supply Co., Box 443, Augusta, Maine 04330
- Glen A. Radel, California Builders Hardware Co., 17 Bluzome Street, San Francisco, Calif. 94107

Representing Users:

- Frank McGuire, Frank R. McGuire Construction Co., 8 East Pennsylvania Ave., Baltimore, Md. 21204
- James E. Monroe, Monroe, Higgins & Lantow, Architects and Engineers, 827 East Yandell Drive, El Paso, Texas 79902
- G. A. Pehrson, Architect, Old National Bank Building, Spokane, Wash. 99201
- Wayne Salom, Sioux Falls Construction Co., 800 South Seventh Ave., Sioux Falls, S. Dak. 57101

General Interests:

- S. M. Knight, Factory Mutual Engineering Division, Factory Mutual System, 1151 Boston-Providence Turnpike, Norwood, Mass. 02060
- F. E. Traver, Architectural Hardware Inc., 800 W. Third Ave., Columbus, Ohio 43212 (Representing the National Builders' Hardware Association)

ACCEPTORS

The manufacturers, distributors, users, and others listed below have individually indicated in writing their acceptance of this Product Standard prior to its publication. The acceptances indicate an intention to utilize the standard as far as practicable, but reserve the right to depart from it as may be deemed desirable. The list is published to show the extent of recorded public support for the standard and should not be construed as indicating that all products made by the acceptors comply with its requirements.

ASSOCIATIONS

(General Support)

- American Institute of Architects, Washington, D.C.
- Associated General Contractors of America, Washington, D.C.
- Home Manufacturers Association, Washington, D.C.
- National Builders' Hardware Association, New York, N.Y.
- Steel Door Institute, Cleveland, Ohio

FIRMS AND OTHER INTERESTS

- Adams, Folger, Co., Joliet, Ill.
- Alco Building Products Co., Cincinnati, Ohio
- American Construction Co., Inc., Washington, D.C.
- American Steel Supply Corp., Fort Wayne, Ind.
- Anweld Building Products, Niles, Ohio
- Anderson, Ted D., Construction Co., Kokomo, Ind.
- Archer, J. S., Co., Richmond, Va.
- Armco Metal Products Div., Armco Steel Corp., Middletown, Ohio
- Babbitt Construction Co., Boise, Idaho
- Barber & McMurry, Inc., Architects, Knoxville, Tenn.
- Barrison & Clarke, Inc., Indianapolis, Ind.
- Baumer, Herbert, Architect, Columbus, Ohio
- Belli & Belli, Architects, Chicago, Ill.
- Bellows, W. S., Construction Corp., Houston, Tex.
- Benike, Alvin E., Inc., Rochester, Minn.
- Bergemann & Associates, Architects, Alliance, Ohio.
- Bornstein, Ale, Inc., Contractors, Louisville, Ky.
- Brust & Brust, A.I.A., Milwaukee, Wis.
- Bush Construction Co., Norfolk, Va.
- Byrne Doors, Inc., Ferndale, Detroit, Mich.
- California Builders Hardware Co., San Francisco, Calif.

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Camlet, J. Thomas, & Sons, Architects & Engineers, Garfield, N.J.
 Carmichael Construction Co., Akron, Ohio
 Casco Co., Boise, Idaho
 Central Indiana Hardware Co., Inc., Indianapolis, Ind.
 Central Supply Co., Augusta, Maine
 Challenger Lock & Hardware Div., Anaheim, Calif.
 Christy-Foltz, Inc., Decatur, Ill.
 Cummings, Don J., Co., Inc., Albuquerque, N. Mex.
 Day & Zimmerman Inc., Engineers & Contractors, Philadelphia, Pa. (General Support)
 Detroit Edison Co., Detroit, Mich.
 D'Lauro, Frank A., Co., Philadelphia, Pa.
 Factory Mutual Engineering Div., Factory Mutual System, Norwood, Mass.
 Fellheimer & Wagner, Architects & Engineers, New York, N.Y.
 Fenestra Inc., Door Products Div., Erie, Pa.
 Fleming Steel Co., New Castle, Pa.
 Fordey Cornice Works, San Francisco, Calif.
 Functional Building Supply, Inc., Cleveland, Ohio
 Gardner Hardware Co., Minneapolis, Minn.
 Gellatly Construction Co., Bridgeport, Conn.
 General Supply Co., Easton, Pa.
 Grellinger-Rose Associates, Inc., Architects, Milwaukee, Wis. (General Support)
 Hager Hinge Co., St. Louis, Mo.
 Haggerty-Messmer Co., Construction, Bozeman, Mont.
 Hardin, Ira H., Co., Constructors & Engineers, Atlanta, Ga.
 Herbst, Jacoby & Herbst, Inc., Architects, Milwaukee, Wis.
 Hirzel, Charles K., Architect, New York, N.Y. (General Support)
 Hogner, P.R.L., Architect, Fort Lauderdale, Fla.
 Holdstein, Milo S., Architect, Cleveland, Ohio
 Ideal Building Materials, Inc., Shreveport, La.
 Independent Lock Co., Fitchburg, Mass.
 International Steel Co., Evansville, Ind.
 Jarvis, Downing & Emch, Inc., General Contractors, Clarksburg, W. Va.
 Jeffers-Dyer, Inc., Builders, Ann Arbor, Mich.
 Joplin Four States Supply Co., Joplin, Mo.
 K-D Frame and Door Corp., Maspeth, N.Y.
 Kant-Slam Door Check Co., Bloomfield, Ind.
 Kemp, Bunch & Jackson, Architects, Jacksonville, Fla.
 Kessell & Morse Co., Worcester, Mass.
 Kewanee Manufacturing Co., Kewanee, Ill.
 Krieger Steel Products Co., Los Angeles, Calif.
 Larson Hardware Co., Sioux Falls, S. Dak.
 Law, Law, Potter & Nystrom, Architects, Madison, Wis.
 Macdean's Inc., North Platte, Nebr.
 Manhattan Construction Co. of Texas, Houston, Tex.
 Maring, Harry, Jr., Inc., Builder, Bridgeport, Conn.
 McCann Steel Co., Nashville, Tenn.
 McPherson Co., Engineers-Architects, Greenville, S.C. (General Support)
 Mesker Brothers, Hazelwood, Mo.
 Miller, Miller & Associates, Architects, Terre Haute, Ind.
 Moffitt, Clare, Architect, Seattle, Wash.
 Monroe, Higgins & Lantow, Architects & Engineers, El Paso, Tex.
 Olsen Construction Co., Santa Rosa, Calif.
 Overly Manufacturing Co., Greensburg, Pa.
 Pehrson, G. A., Architect, Spokane, Wash.
 Philipp Manufacturing Co., Easthampton, Mass.
 Post, Geo. B., & Sons, Architects, New York, N.Y.
 Price, Beryl, Architect, Philadelphia, Pa.
 Republic Steel Corp., Manufacturing Div., Youngstown, Ohio
 Reynolds Construction, Inc., Twin Falls, Idaho
 Roediger Construction, Inc., Cleveland, Ohio
 Rowe Manufacturing Co., Galesburg, Ill.
 Ryan Contracting Corp., New York, N.Y.
 Sargent & Greenleaf, Inc., Rochester, N.Y.
 Sessinghaus & Ostergaard, Inc., Contractors-Engineers, Erie, Pa.
 Slaymaker Lock Co., Lancaster, Pa.
 Southern GF Co., Atlanta, Ga.
 Southern Industrial Steel Co., Arlington, Tex. (General Support)
 Standard Equipment Supply Ltd., Windsor, Ontario, Canada
 Standard Hardware Co., Pensacola, Fla.
 Steelcraft Manufacturing Co., Cincinnati, Ohio
 Struck Construction Co., Inc., Louisville, Ky.
 Sullivan & Cozart, Inc., General Contractors, Louisville, Ky.
 Swanson, G. Fred, Inc., Providence, R.I.
 Trapp Construction Co., Columbus, Ohio
 Trimble, Wm. S., Co., Inc., Knoxville, Tenn.
 Trine Manufacturing Corp., Bronx, N.Y.
 Turner Construction Co., New York, N.Y.
 United States Testing Co., Inc., Hoboken, N.J.
 United Steel Fabricators, Inc., Sub. of Crown Steel Products Co., Orrville, Ohio
 Virginia Metal Products Div., Gray Manufacturing Co., Orange, Va.
 Vogel, Willis A., Architect & Consultant, Toledo, Ohio
 Vredenburgh, Peter, Hardware Co., Steel Products Div., Springfield, Ill.
 Wigton-Abbott Corp., Engineers & Constructors, Plainfield, N.J.
 Wood, Alan, Steel Co., Conshohocken, Pa.
 Yale & Towne, Inc., White Plains, N.J.

GOVERNMENT

Detroit, City of, Department of Public Works, Detroit, Mich.
 General Service Administration, Federal Supply Service, Standardization Div., Hardware & Construction Branch, Washington, D.C. (General Support)
 Interior, Department of, Bureau of Indian Affairs, Aberdeen, S. Dak.
 National Aeronautics & Space Administration, Washington, D.C.
 Post Office Department, Bureau of Facilities, Washington, D.C.

WITHDRAWN

ACCEPTANCE OF PRODUCT STANDARD PS4-66, STANDARD STOCK LIGHT-DUTY 1³/₈- AND 1³/₄-INCH THICK FLUSH-TYPE INTERIOR STEEL DOORS AND FRAMES

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 Product Standard.

Date _____

Office of Engineering Standards Services
National Bureau of Standards
U.S. Department of Commerce
Washington, D.C. 20234

Gentlemen :

We believe that this Product Standard constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the production¹ distribution¹ purchase¹ testing¹ of this commodity.

We reserve the right to depart from the standard 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 _____

(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer _____

Organization _____

(Fill in exactly as it should be listed)

Street address _____

City, State, and ZIP Code _____

¹ Underscore the applicable words. 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.

(Cut on this line)