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OFFICE OF STANDARDS SERVICES

COMMERCIAL STANDARD CS20-63

VITREOUS CHINA PLUMBING FIXTURES

Commercial Standard CS28-63, Vitreous China Plumbing Fixtures, was withdrawn by the U.S. Department on September 20, 1974.

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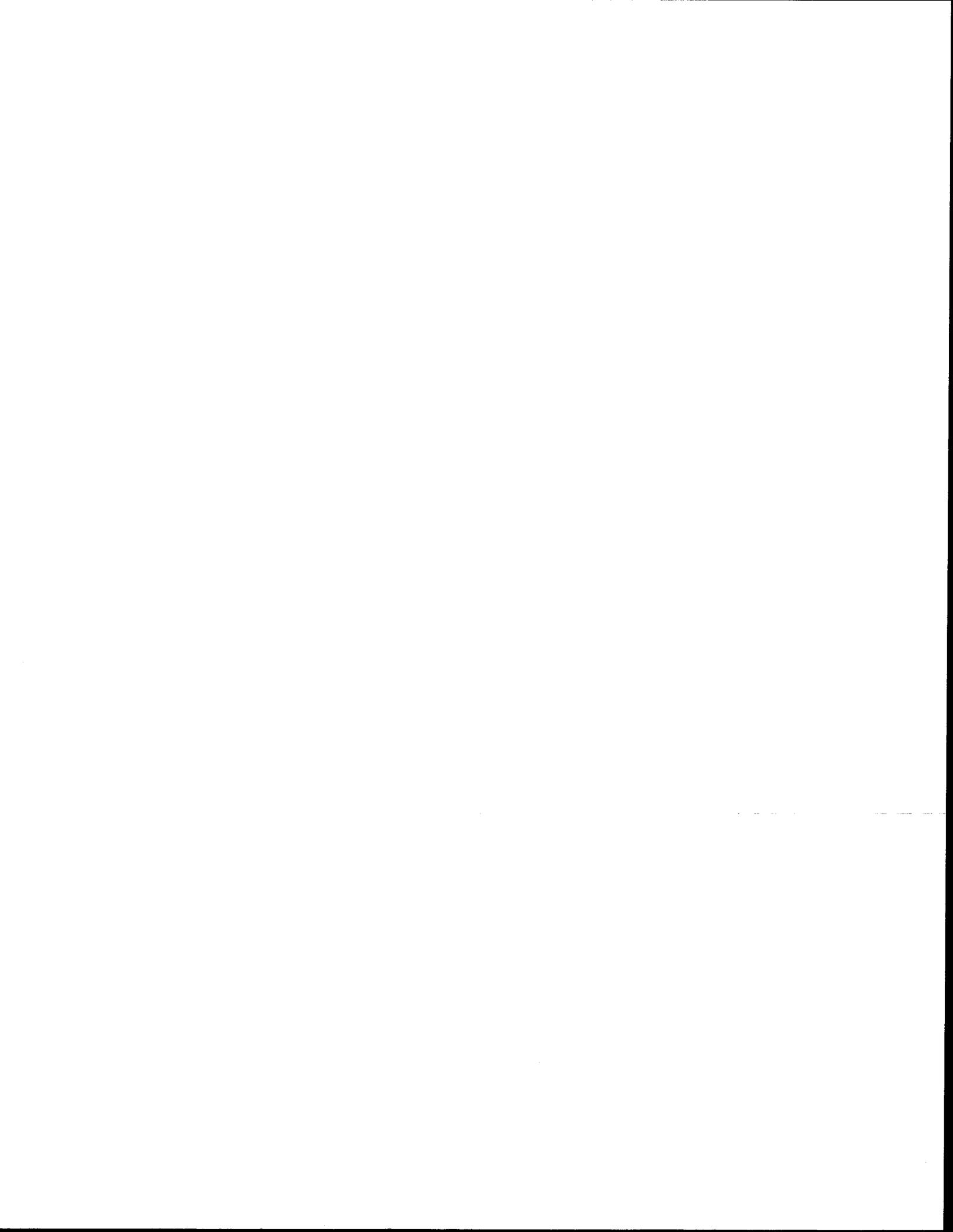
The following standard was used to replace CS20-56: ANSI/ASME A112.19.2M, Vitreous China Plumbing Fixtures.

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COMMERCIAL STANDARD CS20-63

Supersedes CS20-56

VITREOUS CHINA PLUMBING FIXTURES

A recorded
voluntary standard of the
trade published by
the U.S. Department
of Commerce



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U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
Office of Commodity Standards

EFFECTIVE DATE

Having been passed through the regular procedures of the Office of Commodity Standards (formerly the Commodity Standards Division, Office of Technical Services; transferred to the National Bureau of Standards July 1, 1963), and approved by the acceptors hereinafter listed, this Commercial Standard is issued by the U.S. Department of Commerce, effective November 15, 1963.

LUTHER H. HODGES, *Secretary.*

COMMERCIAL STANDARDS

Commercial Standards are developed by manufacturers, distributors, and users in cooperation with the Office of Commodity Standards of the National Bureau of Standards. Their purpose is to establish quality criteria, standard methods of test, rating, certification, and labeling of manufactured commodities, and to provide uniform bases for fair competition.

The adoption and use of a Commercial Standard is voluntary. However, when reference to a Commercial 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.

Commercial Standards originate with the 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 Commodity Standards 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 procedure of the Office assures continuous servicing of each Commercial Standard through review and revision whenever, in the opinion of the industry, changing conditions warrant such action.

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The initial printing of CS20-63 was made possible through the cooperation of the Plumbing Fixture Manufacturers Association.

Vitreous China Plumbing Fixtures

(Seventh Edition)

[Effective November 15, 1963]

1. PURPOSE

1.1 The purposes of this Commercial Standard are to establish a nationally recognized standard for vitreous china plumbing fixtures for the guidance of manufacturers, distributors, and purchasers; to promote better understanding between suppliers and users; and to serve as a basis for fair competition in furnishing vitreous china plumbing fixtures to meet the principal demands of the trade.

2. SCOPE

2.1 This Commercial Standard covers material, grading, dimensions, certain features of construction, and the types and sizes of vitreous china plumbing fixtures currently in general use and demand. Also given are definitions, inspection methods, tests, and means for identifying fixtures that comply with the standard. Certain recommendations for installation of the fixtures are also given.

3. GENERAL REQUIREMENTS

3.1 **Material.**—The fixtures shall be made of vitreous china and shall meet the absorption and crazing tests given herein. (See paragraphs 6.1 to 6.4.)

3.2 **Thickness.**—Vitreous china shall be not less than $\frac{1}{4}$ inch thick at any point.

3.3 **Glazed surfaces.**—The glaze shall be thoroughly fused to the fixture body. All exposed surfaces shall be glazed, except those coming into contact with walls or floors, and except as follows: On lavatories set away from walls, those portions of the rear aprons used for supporting the fixture in kilns, and also the back of the overflows and underside of outlet boss, may be without glaze; the inside, the back, and the underside of water closet tanks and the underside of the lids need not be glazed. Other fixtures may have unglazed portions at points where supported in the kilns, but such unglazed surfaces shall be located so as not to be visible when the fixture is installed in the normal manner. Inside of trapways of water closet bowls shall be glazed.

3.3.1 **Color.**—Vitreous china plumbing fixtures are made in white and in several popular colors. The shade or tint of each color is determined by the individual manufacturer. It is recognized that differences in manufacturing conditions, base materials, and lighting produce minor variations

in color which are commercially acceptable and are not cause for rejection.

3.4 **Grading.**—Vitreous china plumbing fixtures shall be graded in accordance with the method given herein. (See paragraphs 5.1 to 5.6.) The terms "first quality" and "seconds" shall be used to designate the grades thus determined. "First quality" fixtures shall be in full conformity with this standard, and be free from blemishes and defects to the extent specified in tables 1, 2, and 3 as applicable.

3.4.1 Each of the imperfections listed herein as acceptable under the "first quality" grading is caused by some unavoidable condition in the manufacturing process. The blemishes permitted in grading do not affect the utility value of the fixture or make it unsafe from a health or sanitary point of view.

3.5 **Dimensions and tolerances.**—Fixtures shall conform to the applicable dimensions and tolerances given herein. Where not otherwise indicated, a tolerance of plus or minus 5 percent shall apply. Maximum and minimum dimensions are not subject to a tolerance beyond the limits given.

3.6 **Trap seal.**—The depth of seal for integral traps in all vitreous china fixtures shall be not less than 2 inches, except where greater minimum depths are specified herein for certain fixtures.

3.7 **Illustrations.**—The illustrations on pages 7 to 19 are shown for convenience in identifying the various fixtures and for locating dimensions. The illustrations are not intended to indicate standard or required designs.

3.8 **Standard types and sizes.**—The standard fixture types and sizes described in section 4 herein are those most commonly used, and are recommended as affording an adequate selection for all ordinary applications and for stock. It is intended, however, that other types and sizes will be provided as needed, but not carried as stock items. Use of the standard types and sizes wherever possible will be generally beneficial through simplification of production practices, improved distribution, and better service to consumers.

4. FIXTURE TYPES AND SIZES

4.1 **Water closets.**—Fixture shall consist of a water closet bowl made of one-piece vitreous china and equipped with a means for flushing. The water closets described below are considered to be standard fixtures.

(1) **Close-coupled water closet.**—Water closet bowl with separate tank secured to and supported by the water closet bowl, and separate tank cover.

(2) **One-piece water closet.**—A single piece of vitreous china comprising water closet bowl and tank, and separate vitreous china tank cover.

(3) Water closet with direct flushing valve.

4.1.1 **Types of water closets.**—Water closets shall be designated as described above, with the type of water closet bowl inserted, as, for example, "Close-coupled reverse-trap water closet." The standard types of water closet bowls are described in paragraph 4.1.2.

4.1.2 **Water closet bowls.**—

(1) **Siphon-jet water closet bowl.**—A water closet bowl having a siphon trapway at the rear of the bowl, and integral flushing rim and jet. It shall have a minimum water surface of 12 by 10 inches, and a minimum depth of seal of 3 inches. The trapway shall pass a $2\frac{1}{8}$ inch minimum diameter solid ball (see figs. 3 and 4).

(2) **Reverse-trap water closet bowl.**—A water closet bowl having a siphon trapway at the rear of the bowl, and integral flushing rim and jet. It shall have a minimum water surface of 9 by 8 inches, and a minimum water seal of $2\frac{1}{2}$ inches. The trapway shall pass a $1\frac{1}{2}$ inch minimum diameter solid ball (see figs. 5, 6, and 7).

(3) **Washdown water closet bowl.**—A water closet bowl having a siphon trapway at the front of the bowl, and integral flushing rim and jet. It shall have a minimum water surface of 8 by 7 inches, and a minimum water seal of $2\frac{1}{2}$ inches. The trapway shall pass a $1\frac{1}{2}$ inch minimum diameter solid ball (see fig. 8).

(4) **Siphon-jet wall-hanging water closet bowl for direct flushing valve.**—A siphon-jet water closet bowl designed for off-the-floor installation (see fig. 9). Bowl specifications are same as in paragraph (1) above. Bolt-hole dimensions are shown in figure 12-A. Bolt holes may be elongated at the option of each manufacturer to accommodate old mountings.

(5) **Blowout wall-hanging water closet bowl for direct flushing valve.**—A water closet bowl designed for off-the-floor installation, having a trapway at the rear of the bowl, and integral flushing rim and jet. It shall have a minimum water surface of 12 by 10 inches, and a minimum depth of seal of 3 inches. The trapway shall pass a $2\frac{1}{8}$ inch minimum diameter solid ball. Bolt-hole

dimensions are shown in figure 12-B (see figs. 10 and 11).

(6) **"Juvenile" water-closet bowls.**—A siphon-jet water closet bowl measuring 13 to $13\frac{1}{2}$ inches from floor to top of rim. Other specifications are the same as in paragraph (1) above.

4.1.3 **Top contour of water closet bowls.**—Water closet bowls shall have round-front (regular rim) or elongated top contours as shown in figure 2.

4.1.4 **Flushing.**—Water closet bowls covered by this standard shall pass the flush test specified in paragraph 6.5.

4.1.5 **Spud sizes.**—The standard sizes for spuds on water closet bowls are as follows: $1\frac{1}{2}$ inches for water closet bowls operated by direct flushing valves; 2 inches for water closet bowls operated under wall-hung low tanks.

4.1.6 **Outlets.**—The outlets of floor-mounted water closet bowls shall conform to the dimensions shown in figure 1.

4.1.7 **Water closet tanks.**—The tanks shall be of vitreous china with vitreous china cover. Each tank shall have sufficient capacity to flush the bowl with which it is furnished. Water closet tank punching details are shown in figure 13. Water closet tanks designated "Trimmed" tanks shall be furnished with the following:

- (a) Elevated float valve (ball cock) with re-fill tube and float ball rod.
- (b) Float.
- (c) Tank flush valve with overflow.
- (d) Operating lever with handle.

4.2 **Lavatories.**—

4.2.1 **Lavatories.**—Fixture shall be of one-piece vitreous china with front anti-splash rim. In other respects, the bowl design is determined by the individual manufacturer. Lavatory shall have integral overflow at front or back with cross-sectional area of passageway not less than $1\frac{1}{8}$ square inches at every point. Overflow point of slab shall be not more than $\frac{1}{2}$ inch above slab surface at lowest point of faucet bearings. Standard outlet dimensions are shown in figure 14-C. Standard types are as follows:

(1) **Lavatories with back.**—Faucet hole dimensions shown in figures 14-A and 14-B are standard. Faucet holes shall be located in top of slab. Nominal sizes: $20'' \times 18''$; $24'' \times 20$ or $21''$ (see fig. 15).

(2) **Ledge-back lavatories.**—Faucet hole dimensions shown in figure 14-A are standard. Faucet holes shall be located in top of ledge. Nominal sizes: $19'' \times 17''$; $20'' \times 18''$; $22'' \times 18''$; and $24'' \times 20''$ (see fig. 16).

(3) **Shelf-back lavatories.**—Faucet hole dimensions are determined by the individual manufacturer. Faucet holes may be located in front wall of shelf-back or in an inclined panel. Nominal

sizes: 19" x 17"; 20" x 18"; 22" x 18" and 24" x 20" (see fig. 17).

- (4) **Slab-type lavatories.**—Faucet hole dimensions shown in figures 14-A and 14-B are standard. Faucet holes shall be located in top of slab. Wall brackets are required when lavatory is supported by china or metal legs. Nominal sizes: 20" x 18"; 24" x 20 or 21" (see fig. 18).
- (5) **Flat-rim lavatories.**—Faucet hole dimensions shown in figures 14-A and 14-B are standard. Faucet holes shall be in top of slab. Nominal sizes: rectangular, 20" x 18 or 19"; round, 18" diameter (see fig. 19).
- (6) **Corner lavatories with shelf-back.**—Faucet hole dimensions are determined by the individual manufacturer. Faucet holes may be located in front wall of shelf-back or in an inclined panel. Nominal size: 17" x 17" (see fig. 20).

4.3 Urinals.—

4.3.1 Urinal fixture shall be of one-piece vitreous china. The water seal of trap in wall-hanging urinals shall be not less than 2 inches. Standard types are as follows:

- (1) **Stall urinal.**—Fixture shall have either straight or slope front, and integral flush spreader. Two sizes of plain front seam covers for stall urinals are standard; one for urinals installed on 21 inch centers, and one for those on 24 inch centers (see fig. 21).
- (2) **Wall-hanging blowout urinal with extended shields.**—Fixture shall have integral flush spreader, open trapway and extended shields, all molded in the ware (see fig. 22).
- (3) **Wall-hanging blowout urinal.**—Fixture shall have integral flushing rim and trap all molded in the ware (see fig. 23).
- (4) **Wall-hanging washout urinal.**—Fixture shall have integral flush spreader, trap and extended shields all molded in the ware, and may have either an integral cast strainer, a separate removable strainer or an open trapway (see fig. 24).
- (5) **Wall-hanging siphon-jet urinal.**—Fixture shall have integral flush spreader, top inlet, and siphon trap with jet, all molded in the ware (see fig. 25).
- (6) **Wall-hanging washout urinal with bottom outlet.**—Fixture shall have top inlet, bottom outlet, either a flushing rim or a flush spreader, and either an integral cast strainer or a separate removable strainer (see fig. 26).

4.3.2 **Urinal tanks.**—High tanks for urinals shall be of vitreous china, and shall have automatic flush valves. High tanks are furnished in

various sizes to flush approximately 1½, 3, 4½, and 6 gallons.

4.4 Service sinks.—

4.4.1 **Service sinks.**—Fixture shall be one-piece vitreous china of the following standard type.

- (1) **Service sink with back.**—Fixture shall have integral back and space behind back for supplies (see fig. 27).

4.5 Drinking fountains.—

4.5.1 **Drinking fountains.**—Fixture shall be of one-piece vitreous china with integral bowl having beveled or well-rounded corners or edges and designed for minimum splashing of water. Fixtures shall be with or without integral strainers. The nozzle head base shall be above the level of the overflow point of bowl rim, and may be located as desired by the manufacturer. Standard types are as follows:

- (1) **Drinking fountain with back.**—(See fig. 28).
- (2) **Drinking fountain, semi-recessed.**—(See fig. 29).
- (3) **Drinking fountain, recessed.**—(See fig. 30).

5. METHOD OF GRADING

5.1 It is not intended that inspectors shall measure or count any blemishes except in case of doubt, since, with practice, dimensional limits and numbers can be readily gaged by eye.

5.2 Water-closet bowls shall be examined for minor blemishes with the eyes of the observer about 2 feet directly above the rim while the fixture is rocked to either side and backward to an angle of about 45°. Minor blemishes not observed in this operation are assumed to be on unseen surfaces.

5.3 Water-closet bowls, urinals, sinks, laundry trays, service sinks, and all pedestals and legs shall be graded in accordance with table 1. Blemishes such as craze, dull or eggshell finish, dunts, fire checks, large blisters, and projections are not allowed. No exposed body is allowed on the flushing surface or on prominent surfaces.

TABLE 1. *Maximum allowable blemishes for first-quality vitreous china watercloset bowls, urinals, sinks, laundry trays, service sinks, and all pedestals and legs*

| Location | Blemish or defect | Maximum permitted |
|------------------|------------------------------------|--|
| General | Wavy finish..... | Not more than 4 square inches. |
| | Warpage: Water closets..... | Not noticeably warped when seat is attached. |
| | Other fixtures..... | Not more than ¼ inch per foot; total warpage not more than ½ inch. |
| Flushing surface | Spots, blisters, and pinholes..... | No segregation; a total of not over 5. |
| | Bubbles or specks... | Not over 5 in 1 "pottery square"; a total of not over 10. |
| Visible surface | Exposed body..... | Not over ¼ inch on foot; none on more prominent surfaces. |
| | Spots, blisters, and pinholes..... | No segregation; a total of not over 5. |
| | Bubbles or specks... | Not over 3 in 1 "pottery square"; a total of not over 10. |

5.4 Close-coupled tanks shall be graded in accordance with table 2. Examination shall be made with the eyes of the observer about 2 feet from the surface observed. No blemishes on the inside surface shall be counted. Minor blemishes on the outside surface, where hidden by the cover, shall not be counted. Blemishes such as craze, dull or eggshell finish, dunts, exposed body, fire checks, large blisters, and projections are not allowed.

TABLE 2.—Maximum allowable blemishes for first-quality vitreous china close-coupled tanks and covers¹

| Location | Blemish or defect | Maximum permitted ¹ |
|---------------------|------------------------------------|---|
| General..... | Warpage..... | Not noticeably warped. |
| Visible surface.... | Wavy finish..... | Not more than 4 square inches. |
| | Spots, blisters, and pinholes..... | No segregation; a total of not over 5. |
| | Bubbles or specks.... | Not over 3 in 1 "pottery square"; a total of not over 10. |

¹ Covers shall show not more than 50 percent of the number of blemishes listed in table 2.

5.5 Lavatories and drinking fountains shall be graded in accordance with table 3. The fixtures shall be examined with the eyes of the observer about 2 feet from the surface observed. (Pedestals and legs shall be graded the same as water-closet bowls.) Blemishes such as craze, dull or eggshell finish, dunts, exposed body, fire checks, large blisters, and projections are not allowed.

TABLE 3.—Maximum allowable blemishes for first-quality vitreous china lavatories and drinking fountains

| Location | Blemish or defect | Maximum permitted |
|---|------------------------------------|--|
| General..... | Warpage..... | Warpage of slab out of horizontal plane not to exceed 1/4 inch on all sizes. (Warpage of backs of lavatories which are attached to wall not to exceed 1/8 inch.) |
| Service space, top of slab, inside of bowl, and front of apron. | Spots, blisters, and pinholes..... | No segregation; a total of not more than 2. |
| | Bubbles and specks..... | No segregation; a total of not more than 4. |
| Face of integral back and sides. | Polishing marks..... | Not more than 1 allowed. |
| | Spots, blisters, and pinholes..... | Not more than 1 on back or on either side; a total of not more than 3. |
| | Bubbles or specks.... | No segregation; a total of not more than 4. |

5.6 For all vitreous china plumbing fixtures not specifically mentioned in the foregoing, the grading rules for water-closet bowls shall apply.

6. METHODS OF TEST

6.1 **Absorption test.**—Either the red-ink test or the boiling test as described below may be used, but in cases of dispute the boiling test shall be used.

6.2 **Red-ink test.**—A fractured piece of material taken from any part of a vitreous china plumbing fixture, after being immersed in red aniline ink of good color strength for 1 hour, shall not show any discoloration through the glaze and shall not show absorption, when broken, to a depth greater than 1/8 inch below the surface of fracture at any point.

6.3 Boiling test.—

6.3.1 The test sample shall be three fragments taken from any part of the fixture. Each fragment shall have approximately 5 square inches of surface area and a thickness of not more than 5/8 inch. The pieces shall be dried to constant weight at 230 ± 10 °F, and shall then be stored in a desiccator until cooled to room temperature. After reaching room temperature, each specimen shall be weighed on a balance to an accuracy of 0.1 gram.

6.3.2 The weighed pieces shall then be placed in distilled water in a suitable vessel, supported so that they shall not be in contact with the heated bottom of the container, and boiled for 2 hours. They shall be allowed to remain in the water for 20 hours, then each dried slightly with a damp towel to remove excess water, and reweighed to an accuracy of 0.1 gram.

6.3.3 The absorption shall be reported as a percentage of the weight of the dried sample. The percentage for each test piece is obtained by dividing the weight of the water absorbed, in grams, by the weight of the dried test piece, in grams, and multiplying by 100. The average absorption of the three test pieces shall not exceed 1/2 of 1 percent.

6.4 **Crazing test.**—A test specimen not more than 5/8 inch thick by 5 inches square shall be suspended in a solution of equal portions, by weight, of anhydrous calcium chloride and water, and then boiled at a constant temperature of 230 ± 5 °F for 1 1/2 hours. It shall then be removed and immediately plunged into an ice-water bath at 36 to 38 °F until chilled. The specimen shall then be soaked for 12 hours in a concentrated solution of methylene-blue dye, after which it shall be examined for craze lines as indicated by penetration of the blue dye. No crazing is permissible.

6.5 Flushing test for water-closet bowls.

6.5.1 **Paper.**—The standard size paper to be used in this test is 4 1/2 by 5 inches. If a smaller or a larger size is used, the load should be increased or decreased proportionately, based on the square inches of surface per sheet.

6.5.1.1 For interfold (pack type) toilet paper, six sheets in all are considered equivalent to one six-sheet strip of single-roll paper.

6.5.1.2 The "test load" for the flushing test shall be as given below, depending upon the absorption time of the paper used.

| | | | |
|--|--------|--------|---------|
| Paper absorption time, double-strip method, seconds..... | 0 to 3 | 4 to 6 | 7 to 15 |
| Number of crumpled six-sheet strips of single-thickness roll toilet paper..... | 7 | 6 | 5 |

6.5.2 **Method of determining absorption time of paper.**—To determine the absorption time of roll toilet paper by the double-strip method, take two two-sheet strips of paper and place them together with perforations in line, and with curvature from roll in same direction to insure uniform contact. (Continued on page 20.)

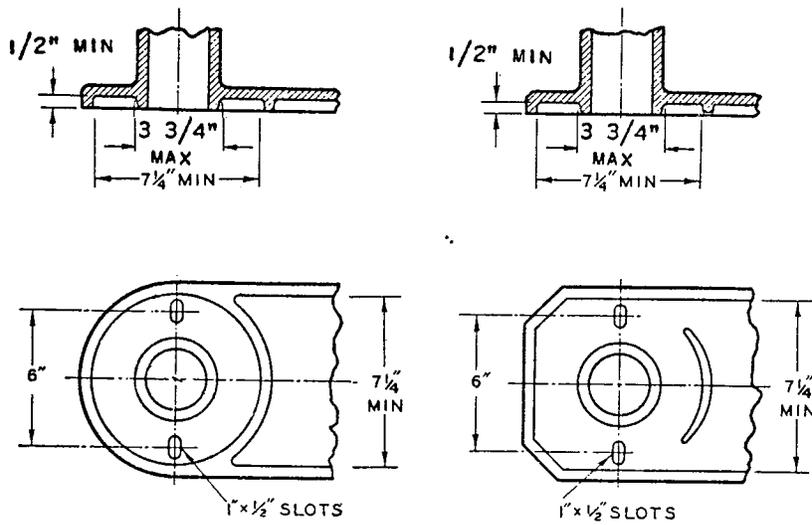


FIGURE 1. OUTLET OF FLOOR-MOUNTED WATER CLOSET BOWLS. (PAR. 4.1.6)

NOTE: DESIGN OF BASES IS DETERMINED BY THE MANUFACTURER WITHIN THE DIMENSIONAL LIMITS SHOWN ABOVE. TWO OF THE MOST COMMON DESIGNS ARE SHOWN. SEE 3.7.

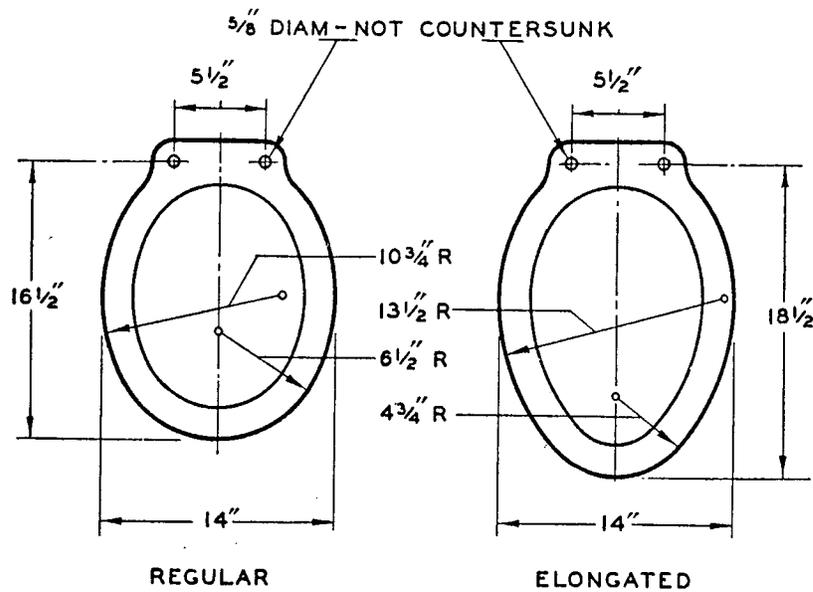


FIGURE 2. TOP CONTOUR FOR WATER-CLOSET BOWLS. (PAR. 4.1.3).

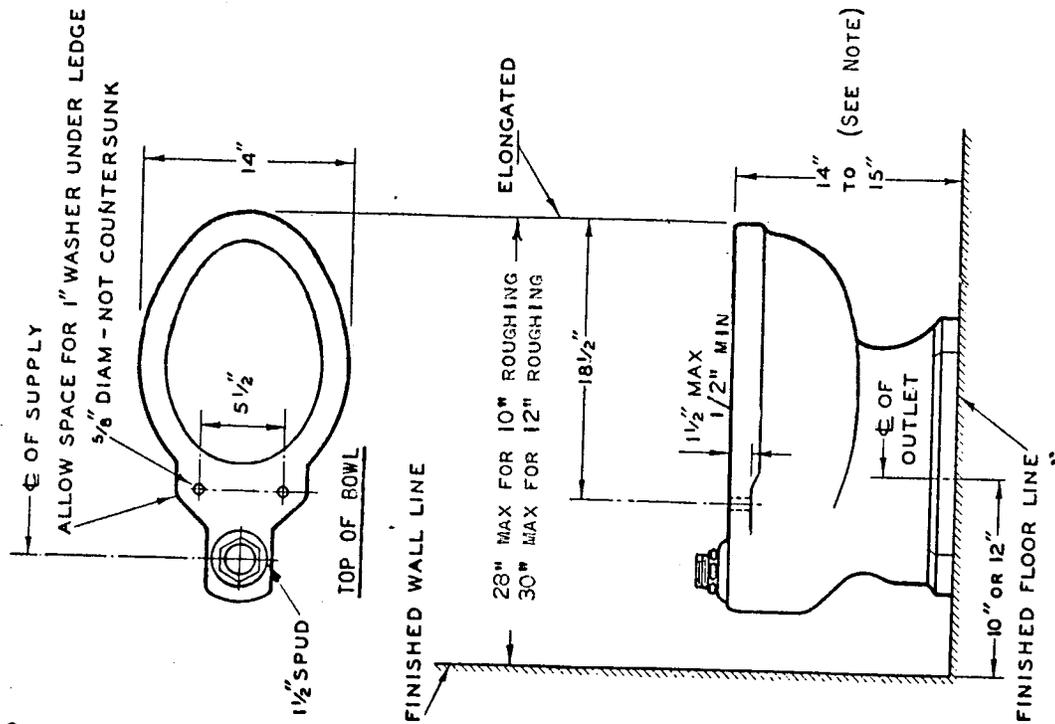


FIGURE 3. SIPHON-JET WATER-CLOSET FOR DIRECT FLUSHING VALVE. (PAR. 4.1.2)

NOTE. THE STANDARD HEIGHT FOR JUVENILE BOWLS IS 13" TO 13 1/2". (PAR. 4.1.2(6)).

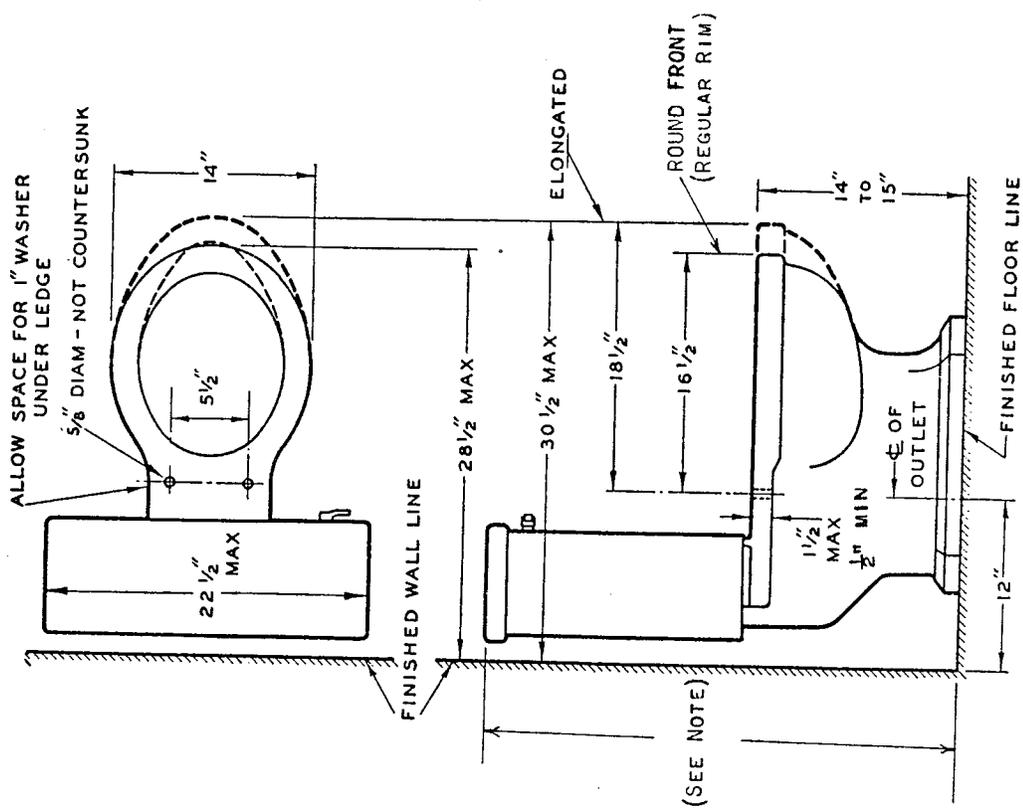


FIGURE 4. CLOSE-COUPLED SIPHON-JET WATER-CLOSET. (PAR. 4.1.2)

NOTE. HEIGHT OF TANK OPTIONAL.

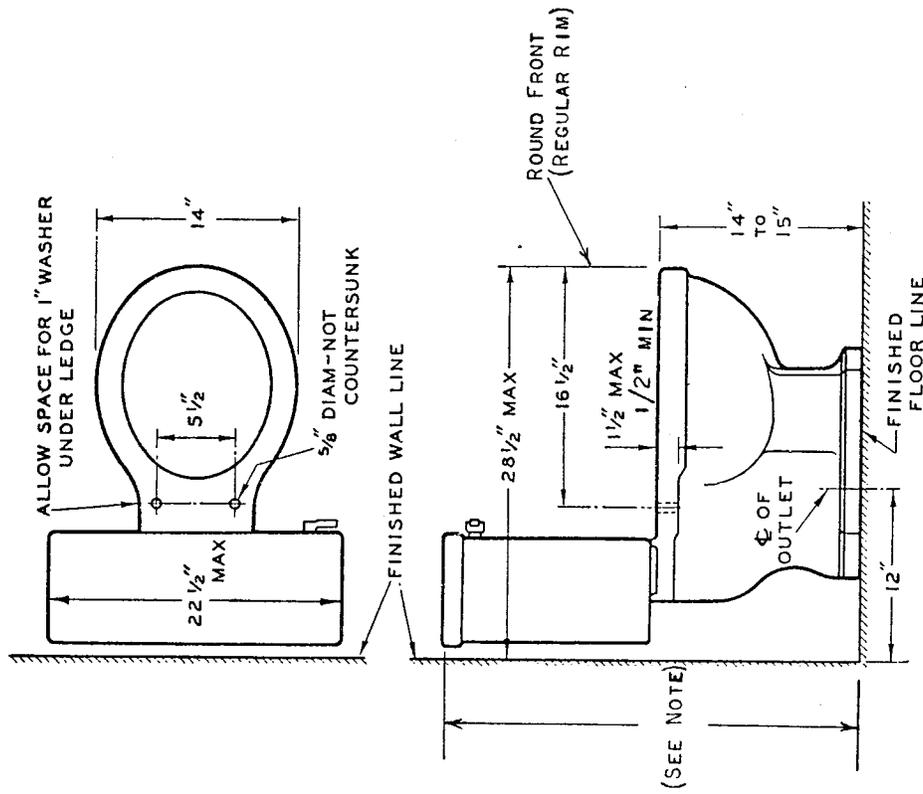


FIGURE 6. CLOSE-COUPLED REVERSE-TRAP WATER-CLOSET (PAR. 4.1.2)

NOTE. HEIGHT OF TANK OPTIONAL.

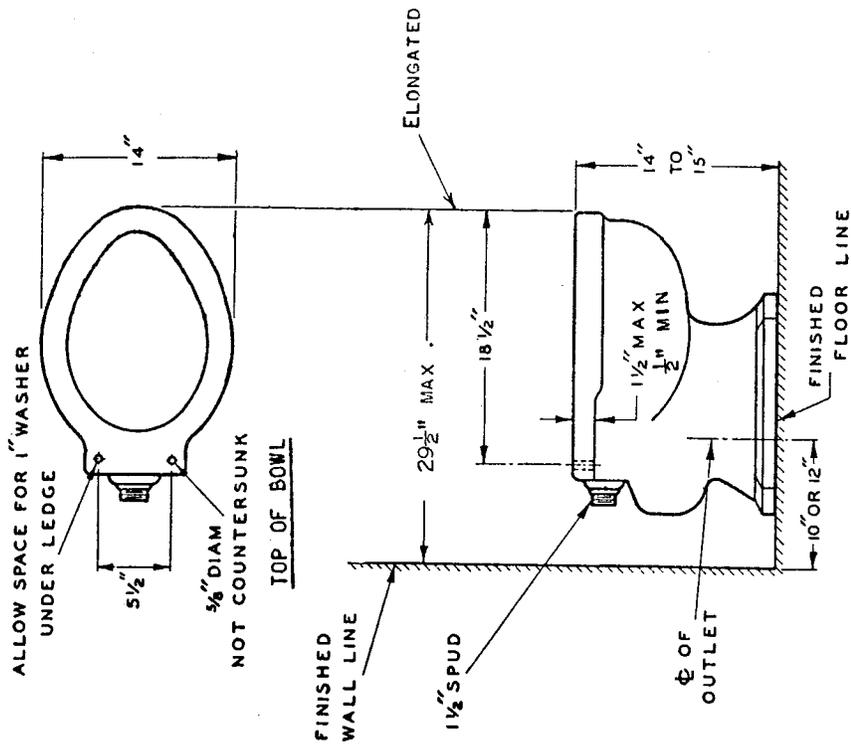


FIGURE 5. REVERSE-TRAP WATER-CLOSET BOWL FOR DIRECT FLUSHING VALVE. (PAR. 4.1.2)

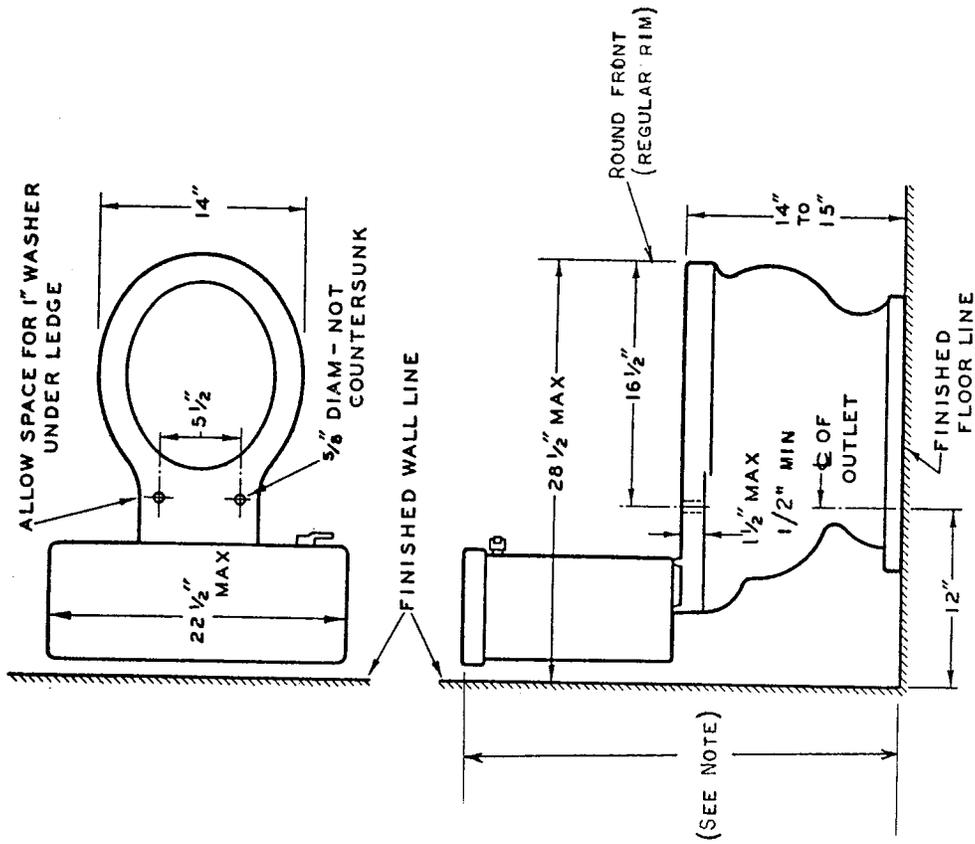


FIGURE 8. CLOSE-COUPLED WASHDOWN WATER-CLOSET.
 PAR. 4.1.2
 NOTE. HEIGHT OF TANK OPTIONAL.

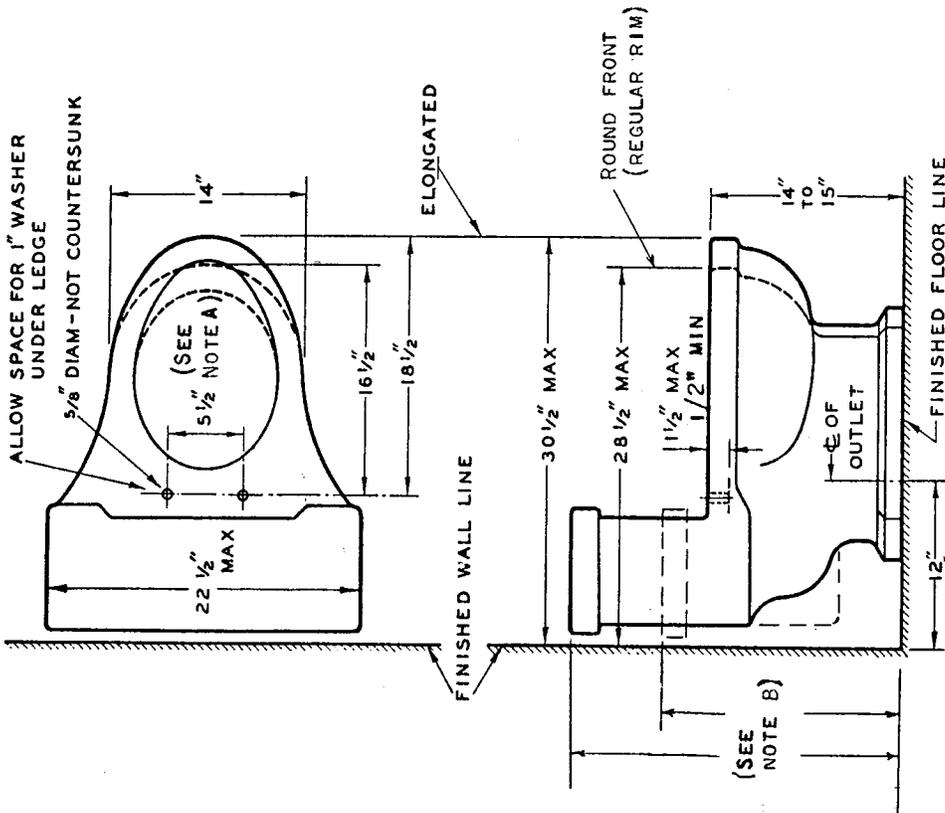


FIGURE 7. ONE-PIECE REVERSE TRAP WATER CLOSET.
 (PAR. 4.1.2)
 NOTE A. WHERE SEAT IS FASTENED TO TANK, SPACING BETWEEN BOLT-HOLE CENTERS SHALL BE 7 INCHES.
 NOTE B. TANK HEIGHT OPTIONAL.

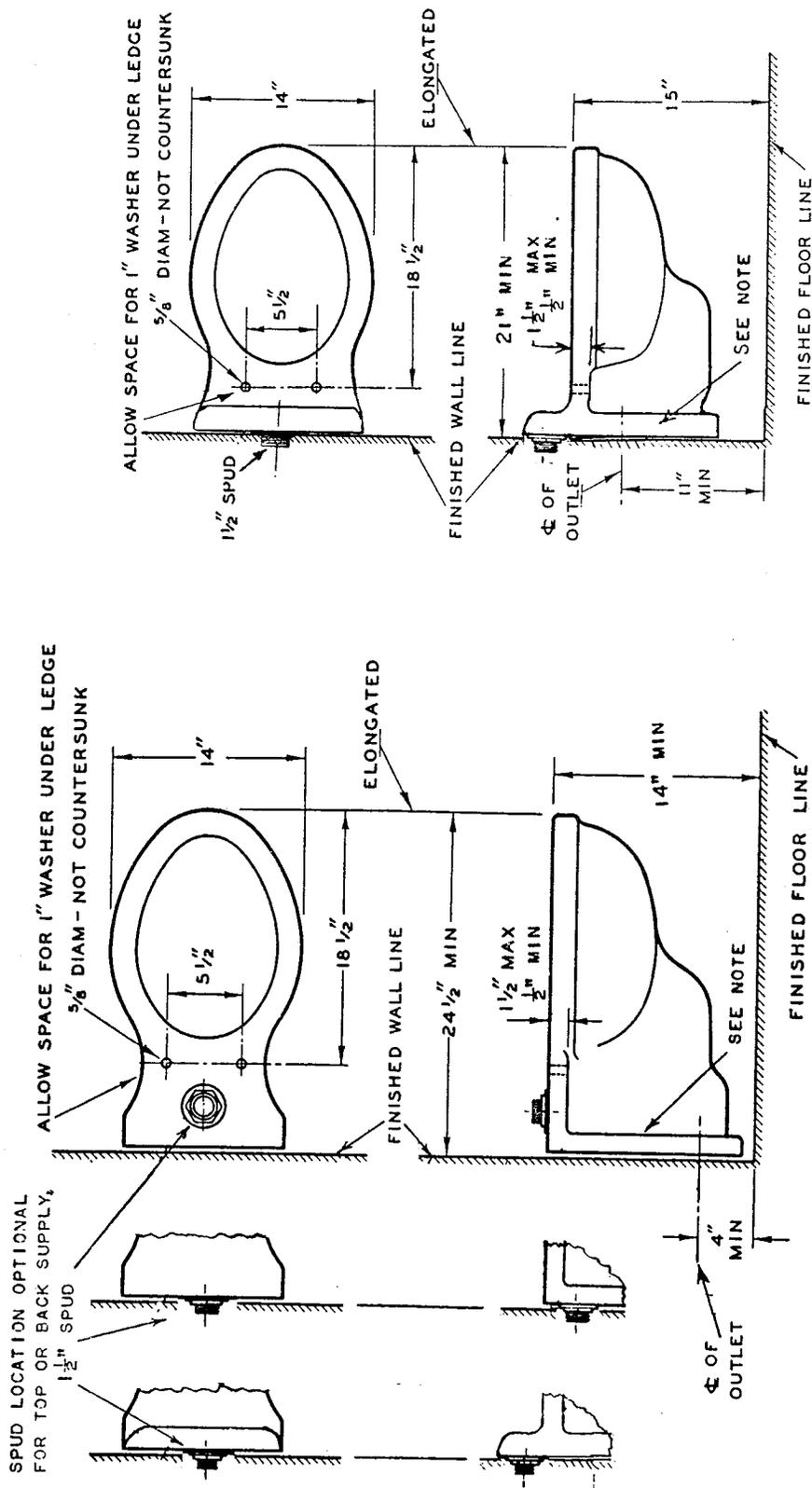


FIGURE 9. SIPHON-JET WALL-HANGING WATER-CLOSET BOWL WITH TOP OR BACK INLET FOR DIRECT FLUSHING VALVE. (PAR. 4.1.2)

NOTE. SEE FIG. 12 FOR BOLT HOLE LOCATIONS.

FIGURE 10. BLOWOUT WALL-HANGING WATER-CLOSET BOWL WITH EACH INLET FOR DIRECT FLUSHING VALVE. (PAR. 4.1.2)

NOTE. SEE FIG. 12 FOR BOLT HOLE LOCATIONS.

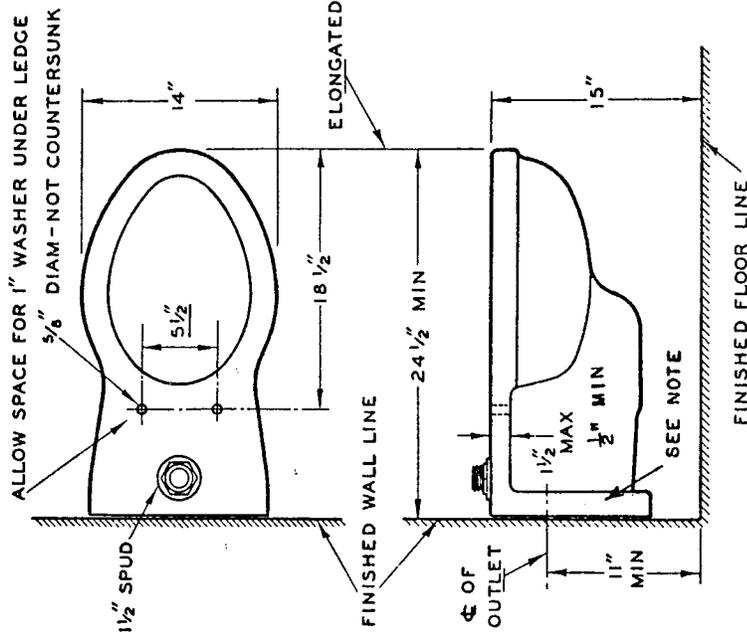
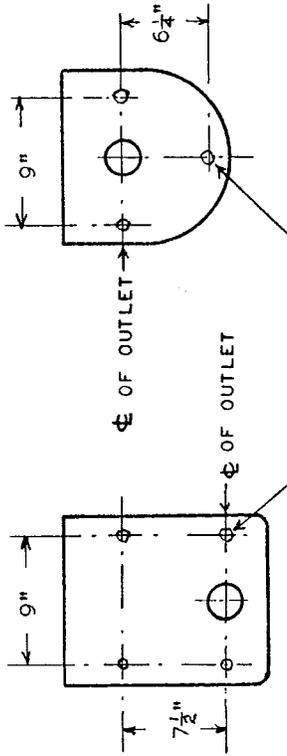


FIGURE 11. BLOWOUT WALL-HANGING WATER CLOSET BOWL WITH TOP INLET FOR DIRECT FLUSHING VALVE. (PAR. 4.1.2)

NOTE. SEE FIG. 12 FOR BOLT HOLE LOCATIONS.



ALL BOLT HOLES 7/8" MINIMUM DIAMETER

DETAIL "A"—SIPHON JET BOWLS. REAR VIEW OF MOUNTING. (FIG. 9)
 DETAIL "B"—BLOWOUT BOWLS. REAR VIEW OF MOUNTING. (FIGS. 10 AND 11)

FIGURE 12. WALL-HANGING WATER-CLOSET BOWL MOUNTING DETAILS.

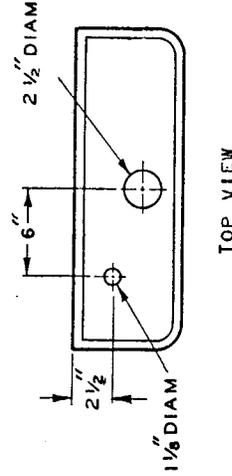
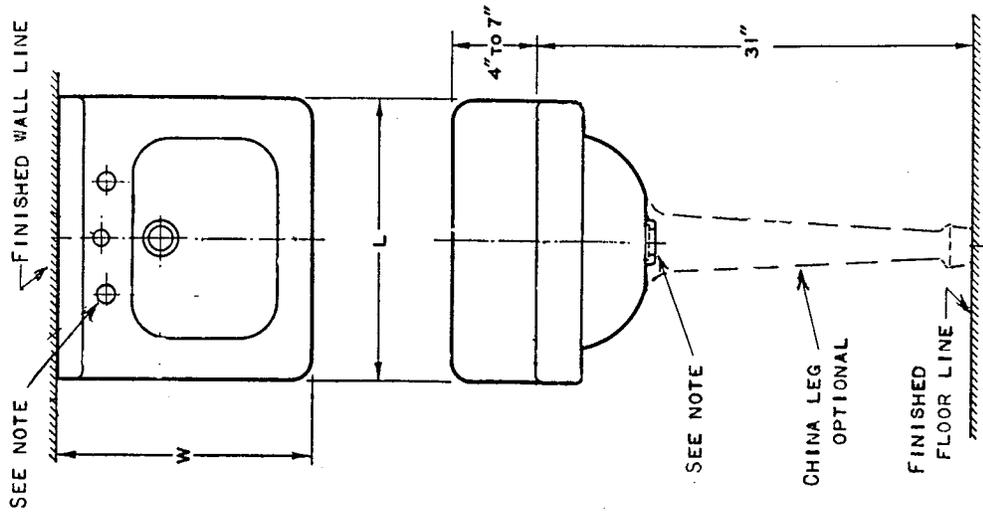


FIGURE 13. WATER-CLOSET TANK PUNCHING DETAILS (PAR. 4.1.7)

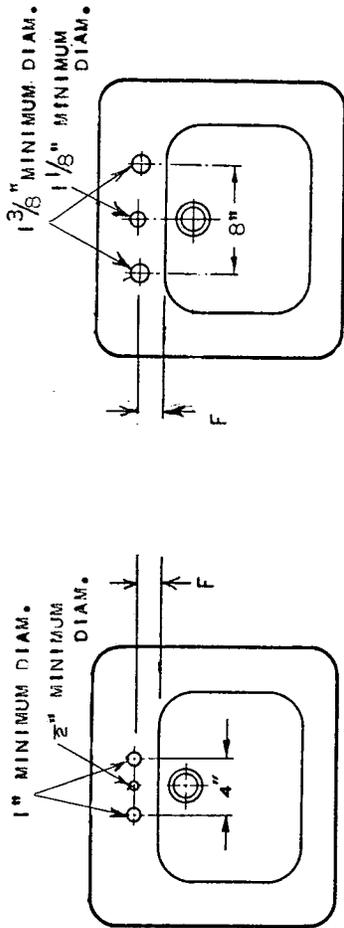
NOTE. DESIGN OF TANK IS DETERMINED BY THE MANUFACTURER.



| STANDARD SIZES, INCHES | |
|------------------------|----------|
| L | W |
| 20 | 18 |
| 24 | 20 OR 21 |

FIGURE 15. LAVATORIES WITH BACK.
(PAR. 4.2.1)

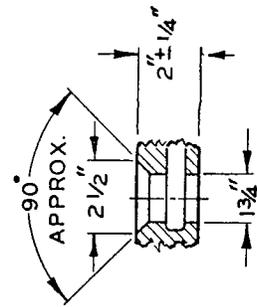
NOTE. SUPPLY PUNCHINGS AND OUTLET AS SHOWN IN FIG. 14, DETAILS "A", "B", AND "C".



DETAIL "A" - PUNCHINGS FOR CENTER SET SUPPLY FITTINGS.

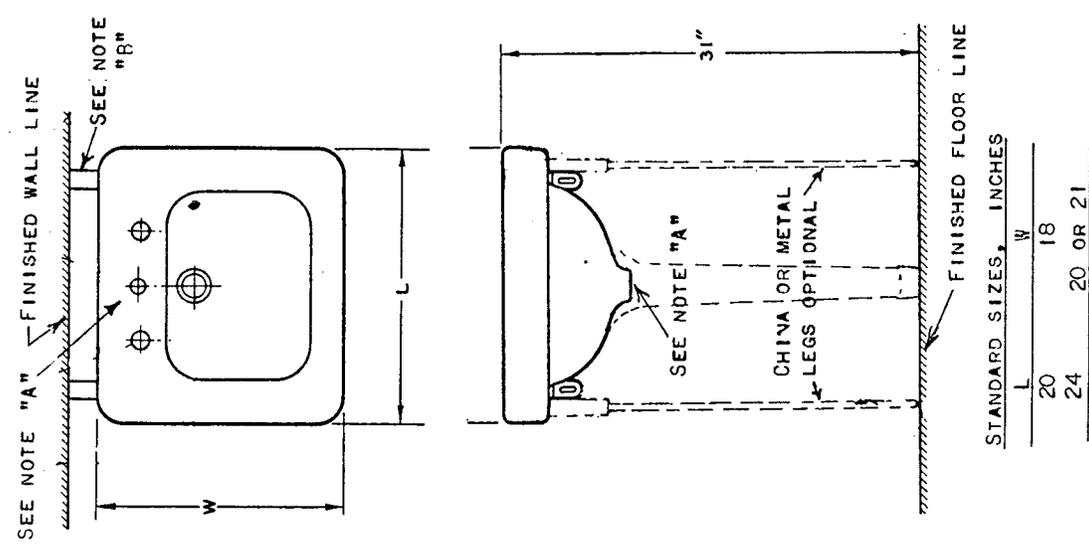
DETAIL "B" - PUNCHINGS FOR SEPARATE FAUCETS AND COMBINATION SUPPLY FITTINGS.

NOTE. FOR LAVATORIES WITH FRONT OVERFLOW, DIMENSION F = 2" MAXIMUM.



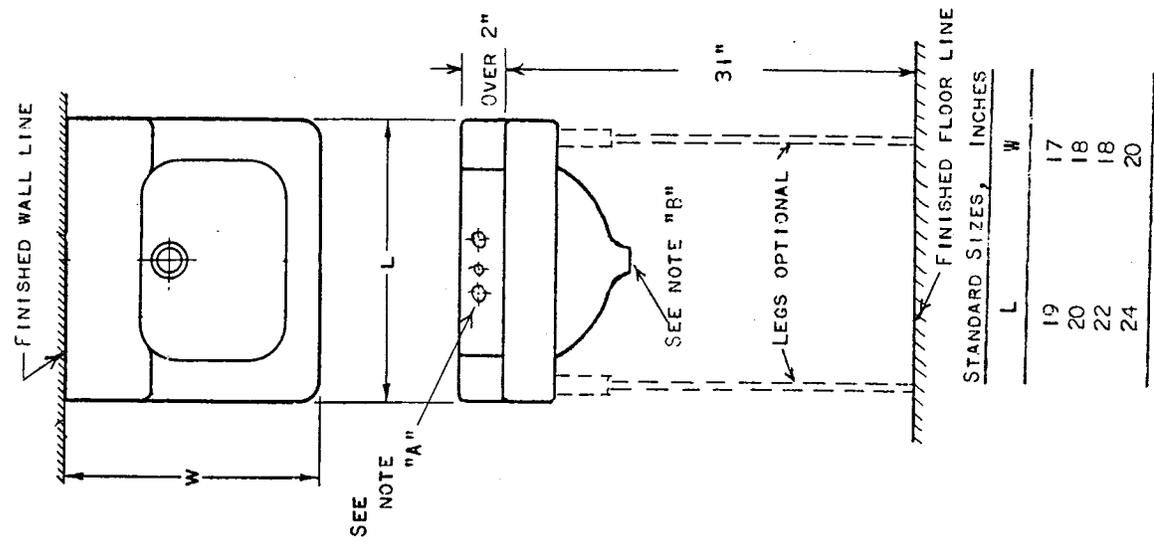
DETAIL "C" - LAVATORY OUTLET DIMENSIONS

FIGURE 14. LAVATORY SUPPLY PUNCHINGS, AND OUTLET DETAILS.



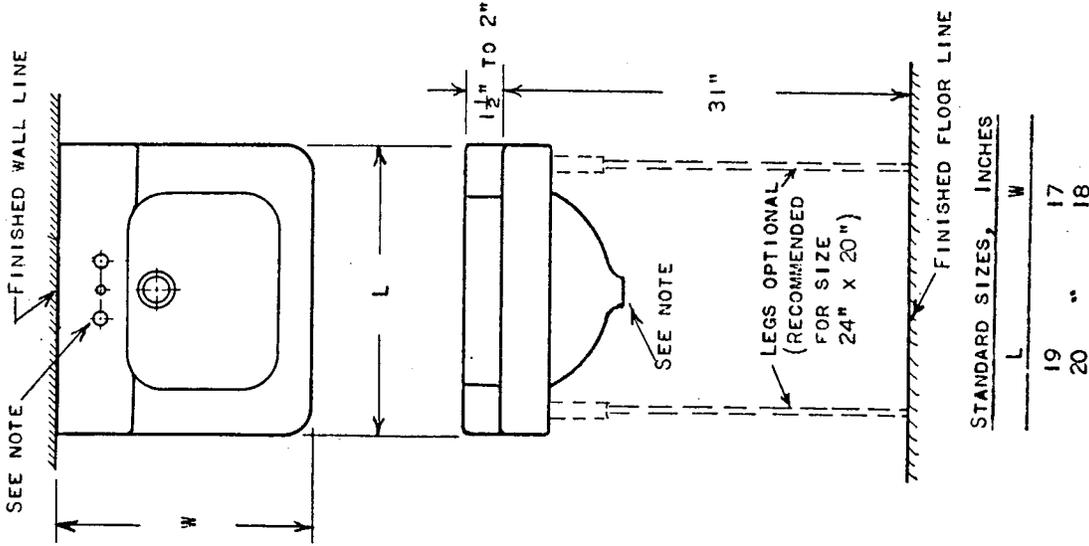
| STANDARD SIZES, INCHES | |
|------------------------|----|
| L | W |
| 19 | 17 |
| 20 | 18 |
| 22 | 18 |
| 24 | 20 |

FIGURE 16. LEDGE-BACK LAVATORIES.
(PAR. 4.2.1)
NOTE. SUPPLY PUNCHINGS AND OUTLET AS SHOWN IN FIG. 14, DETAILS "A" AND "C".



| STANDARD SIZES, INCHES | |
|------------------------|----|
| L | W |
| 19 | 17 |
| 20 | 18 |
| 22 | 18 |
| 24 | 20 |

FIGURE 17. SHELF-BACK LAVATORIES
(PAR. 4.2.1)
NOTE "A". FAUCET HOLE SIZES AND LOCATION AS DETERMINED BY MFR.
NOTE "B". OUTLET AS SHOWN IN FIG. 14.



| STANDARD SIZES, INCHES | |
|------------------------|----------|
| L | W |
| 20 | 18 |
| 24 | 20 OR 21 |

FIGURE 18. SLAB-TYPE LAVATORIES.
(PAR. 4.2.1)
NOTE "A". SUPPLY PUNCHINGS AND OUTLET AS SHOWN IN FIG. 14 "A", "B", "C".
NOTE "B". WALL BRACKETS REQUIRED WHEN SUPPORTED BY CHINA OR METAL LEGS

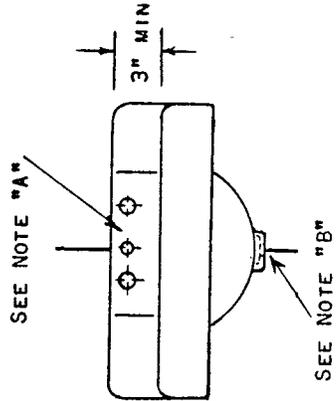
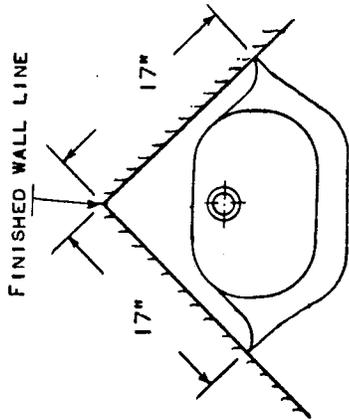
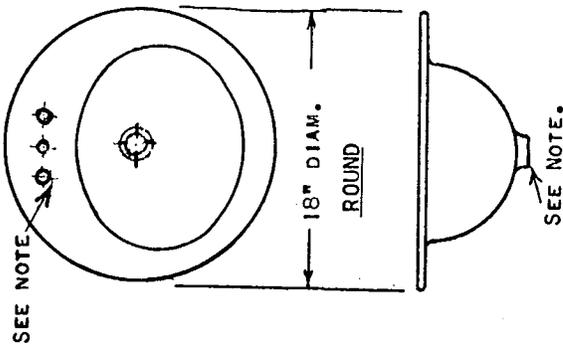
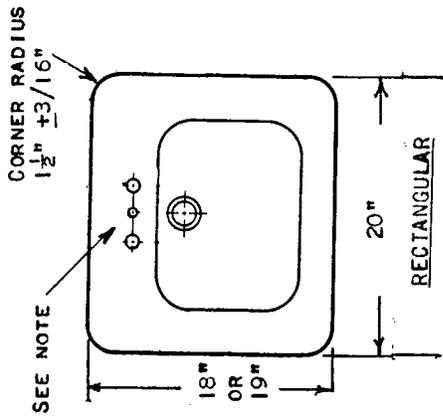


FIGURE 20. CORNER LAVATORIES WITH SHELF-BACK (PAR. 4.2.1.)
 NOTE "A". FAUCET HOLE SIZES AND LOCATION AS DETERMINED BY MANUFACTURER.
 NOTE "B". OUTLET AS SHOWN IN FIG. 14.

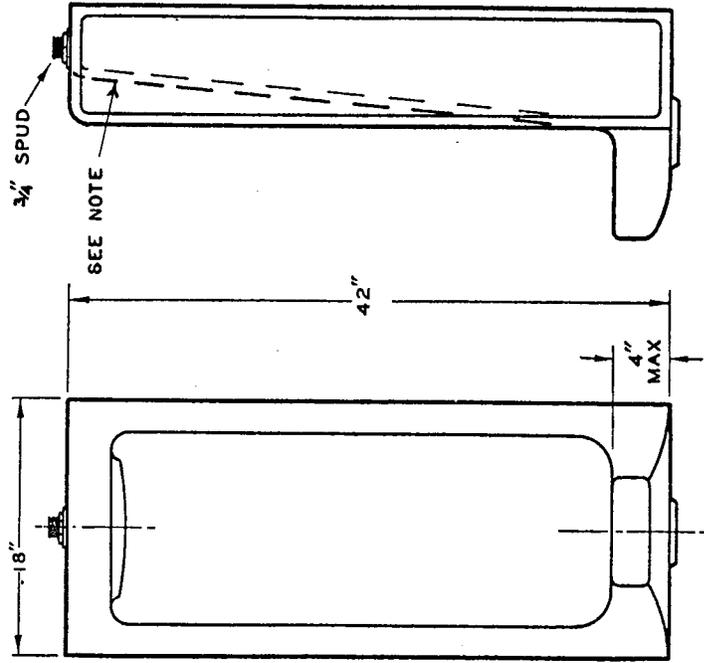
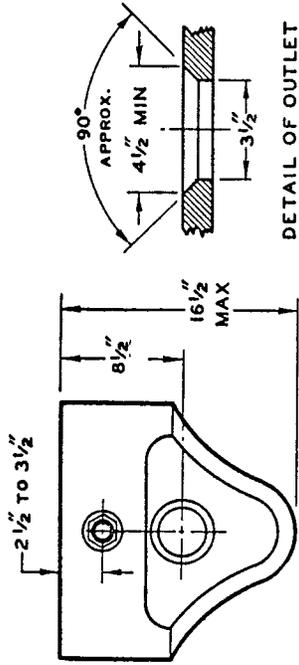


FIGURE 21. STALL URINAL.
 (PAR. 4.3.1.)

Note. Front either straight or sloped.

FIGURE 19. FLAT-RIM LAVATORIES.
 (PAR. 4.2.1.)
 NOTE. SUPPLY PUNCHINGS AND OUTLET AS SHOWN IN FIG. 14, DETAILS "A", "B", AND "C".

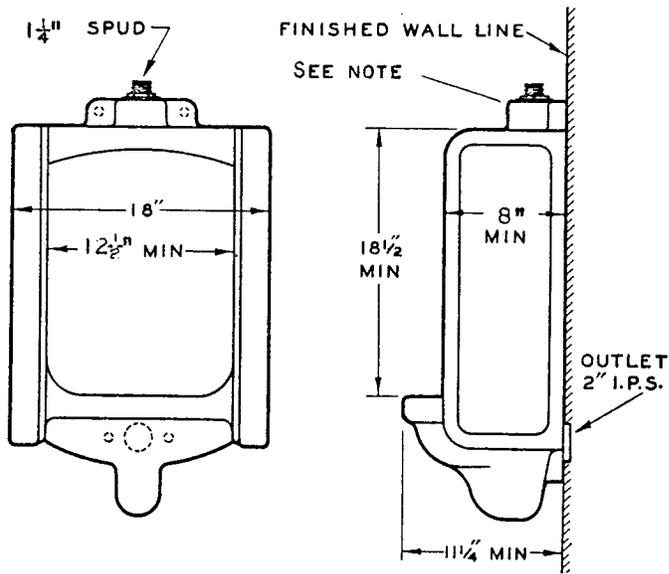


FIGURE 22. WALL-HANGING BLOWOUT URINAL. (PAR. 4.3.1.)
 NOTE: MAY HAVE FLAT TOP AND CONCEALED HANGER.

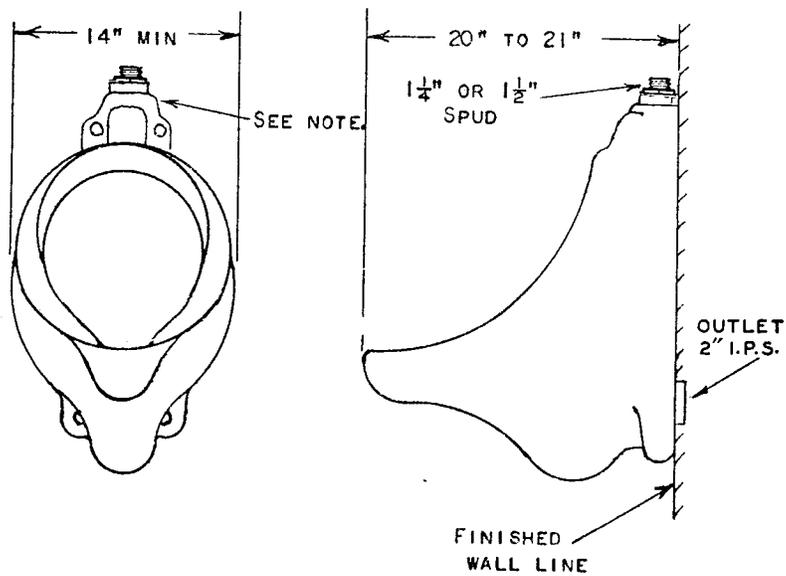


FIGURE 23. WALL-HANGING BLOWOUT URINAL. (PAR. 4.3.1.)
 NOTE: MAY HAVE FLAT TOP AND CONCEALED HANGER.

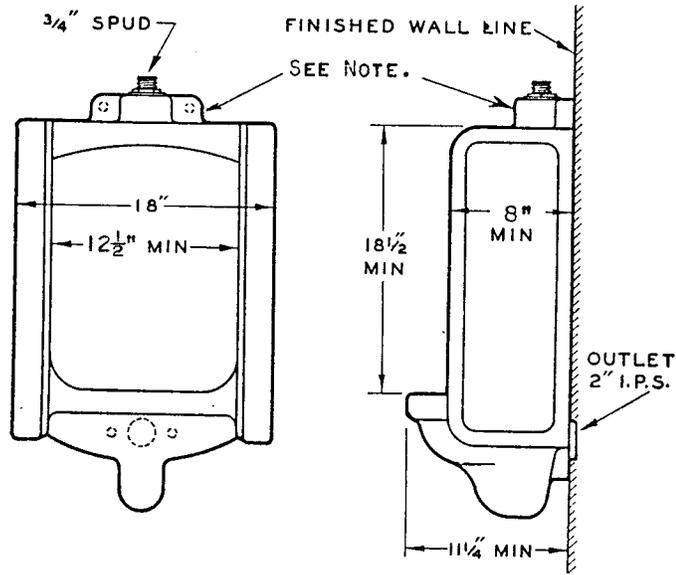


FIGURE 24. WALL-HANGING WASHOUT URINAL. (PAR. 4.3.1.)

NOTE. MAY HAVE FLAT TOP AND CONCEALED HANGER.

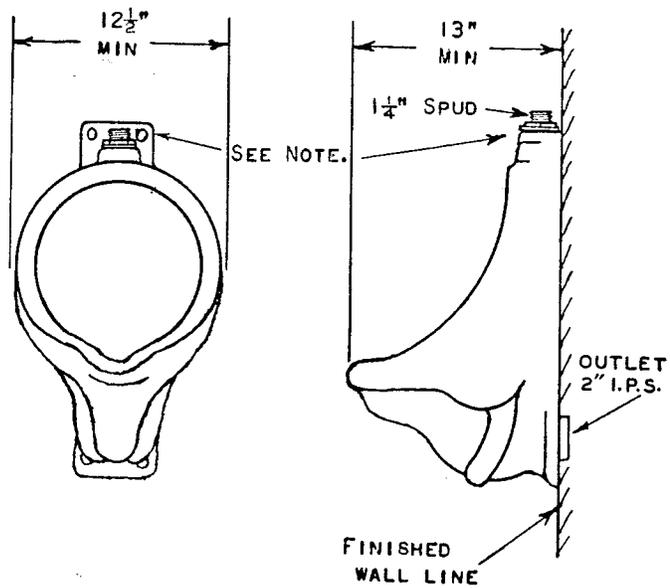


FIGURE 25. WALL-HANGING SIPHON-JET URINAL. (PAR. 4.3.1.)

NOTE. MAY HAVE FLAT TOP AND CONCEALED HANGER.

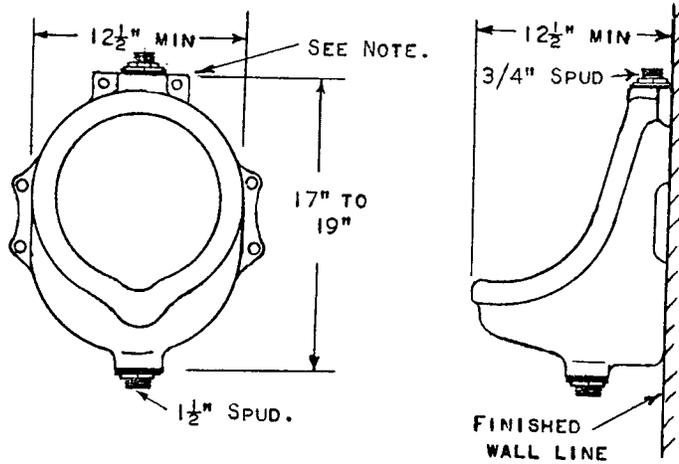


FIGURE 26. WALL-HANGING WASHOUT URINAL WITH BOTTOM OUTLET. (PAR. 4.3.1.)

NOTE. MAY HAVE FLAT TOP AND CONCEALED HANGER.

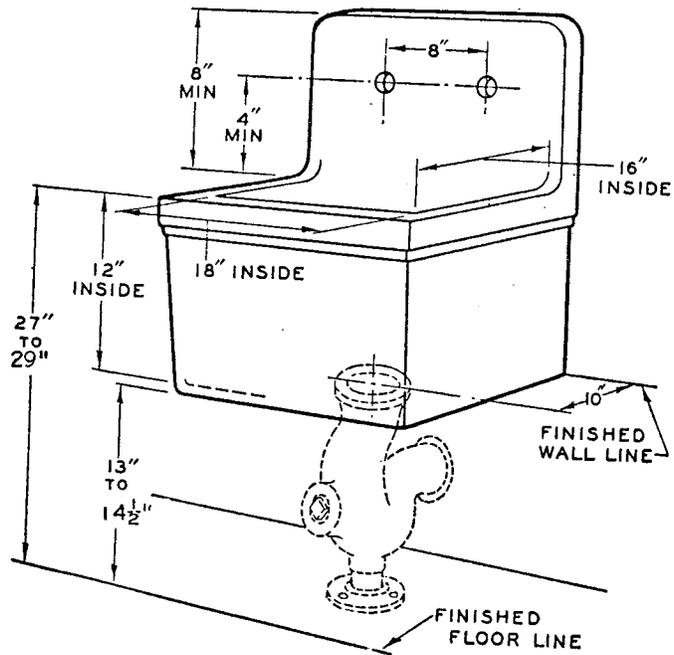


FIGURE 27. SERVICE SINK. (PAR. 4.4.1.)

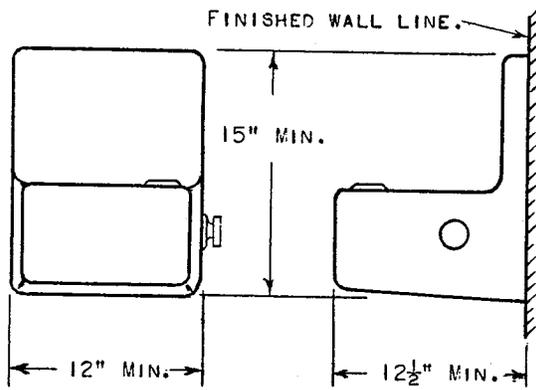


FIGURE 28. DRINKING FOUNTAIN, WITH BACK. (PAR. 4.5.1.)

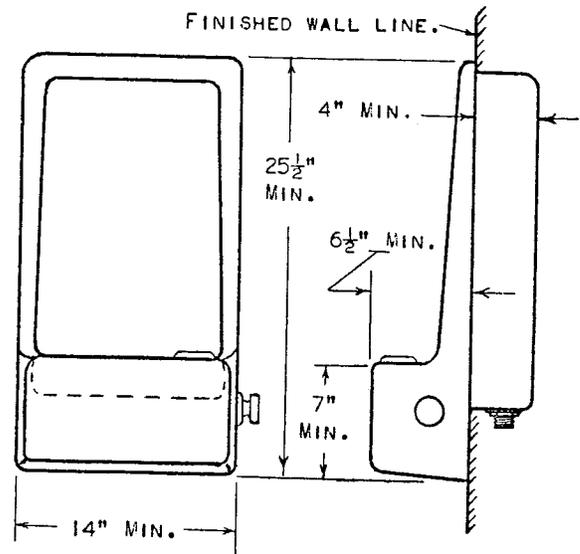


FIGURE 29. DRINKING FOUNTAIN, SEMI-RECESSED. (PAR. 4.5.1.)

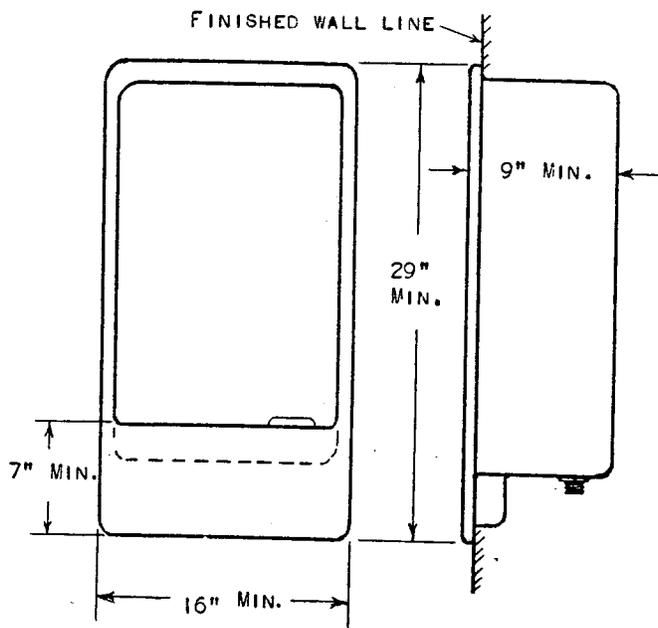


FIGURE 30. DRINKING FOUNTAIN, RECESSED. (PAR. 4.5.1.)

6.5.2.1 These two strips shall then be placed gently on the surface of the water with convex side of paper down. The time in seconds shall be recorded from the moment the paper touches the water until a spot of moisture approximately $\frac{1}{8}$ inch in diameter appears on the upper strip. Spots appearing through imperfections in the paper or at edges shall be ignored. (This test can best be made in a lavatory basin or sink where light is usually better than in closet bowl.)

6.5.2.2 The absorption time of interfold (pack-type) paper shall be determined in the same manner as for roll toilet paper, after first cutting the interfold sheets where folded, then placing the two sheets on the surface of the water.

6.5.3 **Procedure for testing.**—The bowl shall be level, the trap and outlet clear, the bowl filled to weir level, the tank filled to the water line where marked and, in the absence of a mark, to a point 1 inch below top of overflow, and the float valve (ball cock) shall be adjusted to fill tank in not more than 3 minutes.

6.5.3.1 The given number of six-sheet strips of roll toilet paper, as determined by absorption time, shall each be crumpled into a loose ball measuring 2 to 3 inches in diameter, and dropped all together as a "test load" into the bowl and the bowl flushed immediately. The bowl shall flush similar "test loads" repeatedly.

6.5.3.2 If interfold (pack-type) paper is used, six sheets shall be crumpled into a ball in place of each six-sheet strip of roll paper, and the test shall be made as outlined above for roll paper.

6.5.3.3 No paper other than common toilet paper, coming within the absorption time range as mentioned above, shall be used for the test.

6.5.3.4 When water closet bowls to be tested are connected to direct-flushing valves, the control stop and valve should first be adjusted for best flushing action. The flow pressure (maintained at the flushing-valve inlet during test) shall not be less

than:

10 pounds per square inch for siphon-action bowls.

20 pounds per square inch for blowout bowls.

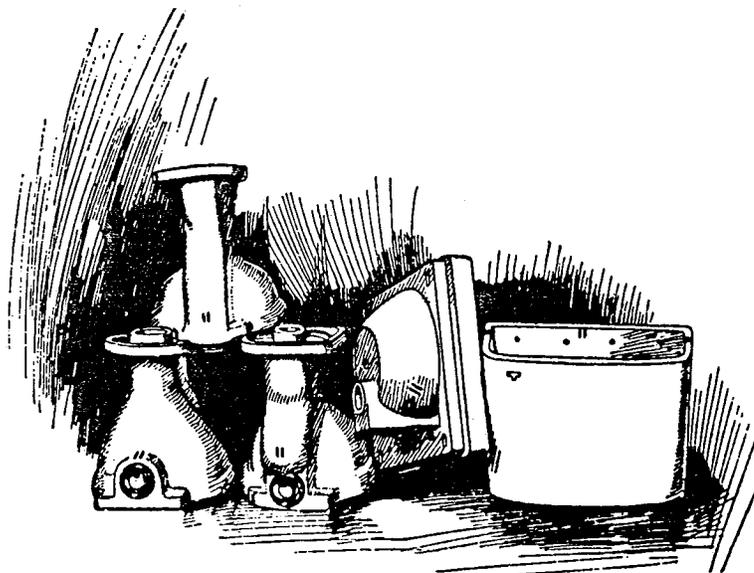
6.6 **Method of determining warpage.**—The fixture shall be placed on a flat surface so as to ascertain the amount of deviation from the horizontal plane that exists at the edges of the fixture. If a feeler gage of thickness equal to the total allowable warpage will not slide under the fixture without forcing, the fixture satisfactorily comes within the warpage limitations. If the fixture will rock on two opposite corners, the horizontal plane shall be determined by placing one feeler gage, of the total warpage allowed, under a corner that does not touch the plane and forcing the fixture down on this gage. If a second feeler gage of the same thickness will not slide under the fixture at any other point, the fixture is not warped out of horizontal plane by more than the specified tolerance, and satisfactorily comes within the warpage limitations.

7. MARKING AND LABELING

7.1 Each vitreous china plumbing fixture shall be plainly and permanently branded for identification with the name or trade-mark of the manufacturer, and date of manufacture.

7.2 **First quality.**—Labels shall be used only on ware that conforms to the requirements for "first quality" as set forth in this standard. It is recommended that manufacturers include the following statement, in conjunction with their name and address, on labels, invoices, guarantees, sales literature, etc.

"This vitreous china plumbing fixture is first quality and complies with the requirements and tests of Commercial Standard CS20-63, as developed by the trade under the Commodity Standards Procedures, and issued by the U.S. Department of Commerce."



7.3 **Seconds.**—All “second” grade ware shall be indelibly marked by the maker with two parallel lines cut through the glaze into the body of the ware at the location (see fig. 31) recommended by the Plumbing Fixture Manufacturers Association. These cuts shall be filled with a bright red varnish or enamel which is resistant to the action of hot water. No labels shall be placed on “seconds.”

7.3.1 All packages containing “seconds” shall be clearly identified with two red marks adjacent to fixture identification.

8. NOMENCLATURE AND DEFINITIONS

8.1 Nomenclature and definitions applicable to vitreous china plumbing fixtures are as follows:

Blister.—A raised portion of the surface $\frac{1}{32}$ (0.031) inch to $\frac{1}{8}$ (0.125) inch in maximum dimension.

Large blister.—A raised portion of the surface $\frac{1}{8}$ (0.125) inch to $\frac{1}{4}$ (0.25) inch, inclusive, in maximum dimension.

Bubble.—A raised portion of the surface or a sand speck smaller than $\frac{1}{32}$ (0.031) inch in maximum dimension.

Craze.—Fine cracks in the glaze.

Discoloration.—A colored spot over $\frac{1}{4}$ (0.25) inch in maximum dimension or a sufficient number of specks or spots to give the effect of a change in color.

Dull or eggshell finish.—Dead or flat finish. Undeveloped glaze. A semiglazed finish with numerous very fine pinholes, or slightly matted in appearance. Not glossy.

Dunt.—A hairline fracture extending through the body, and caused by strains set up in the process of manufacture.

Exposed body.—Unglazed portion $\frac{1}{16}$ (0.063) inch or more in maximum dimension.

Finish.—Texture and condition of surface other than color.

Fire check.—Fine shallow crack in the body not covered with glaze. (When sufficiently covered with glaze so as to be easily cleaned, it is not detrimental.)

First quality.—First-class ware in conformity with the grade limitations and other requirements of this standard.

Fittings.—Adjuncts to a fixture subject to selection or options of the purchaser, as, for example, faucets and waste plugs.

Fixture.—The china piece only, without trimmings and/or fittings.

Flushing surface.—The surface, visible after installation, which may be wet during the operation of the fixture.

Integral.—A part cast integrally with the fixture such a bubbler, trap, seat, or tank.

Pinhole.—A small hole in the glazed surface under $\frac{1}{16}$ (0.063) inch in maximum dimension.

Polishing mark.—A spot not larger than $\frac{3}{8}$ (0.375) inch in maximum dimension where

some minor blemish has been ground off and the surface polished.

Pottery square.—A square 2 inches on each side. For grading purposes, it may be a 2-inch square hole cut in a small sheet of any flexible material such as rubber or paper, for convenience in sliding over irregular surfaces to determine segregation.

Projection.—A raised portion of the surface over $\frac{1}{4}$ (0.25) inch in maximum dimension.

Roughing-in measurement.—Dimension from finished wall or floor to center of waste or supply opening.

Seconds.—Ware which grades below “first quality,” but is considered serviceable and safe from a health or a sanitary point of view.

Segregation.—More than four spots, blisters, or pinholes in any pottery square.

Speck.—An area of contrasting color less than $\frac{1}{32}$ (0.031) inch in maximum dimension. Specks less than $\frac{1}{100}$ (0.01) inch in maximum dimension, unless in sufficient number to form a discoloration, are not counted.

Spot.—An area of contrasting color $\frac{1}{32}$ (0.031) inch up to $\frac{1}{8}$ (0.125) inch in maximum dimension.

Large Spot.—An area of contrasting color $\frac{1}{8}$ (0.125) inch to $\frac{1}{4}$ (0.25) inch, inclusive, in maximum dimension.

Spud.—A threaded brass connection inserted in the vitreous chinaware.

Trap.—A fitting or device so designed and constructed as to provide, when properly vented, a liquid seal which will prevent the back-passage of air without materially affecting the flow of sewage or waste water through it.

Trimming.—Parts, other than china, regularly supplied with a fixture, as, for example, closet spuds, wall hangers, and tank trim. Trimmings do not include fittings.

Visible surface.—The surface which, after installation of the fixture, is readily visible to an observer in a normal standing position.

Vitreous.—That degree of vitrification evidenced by not more than 0.5 percent absorption in the boiling test. See par. 6.3.

Vitreous china (as applied to plumbing fixtures).—Compounded ceramic materials fired at high temperature to form a vitreous body with exposed surfaces coated with ceramic glaze fused to the body. Vitreous china does not craze or peel, and the body does not absorb water in excess of $\frac{1}{2}$ of 1 percent of its weight.

Water surface.—The surface of the still water in the water closet bowl, when filled to the top of the dam.

Wavy finish.—A defect in the finish having the appearance of numerous runs in the glaze; irregular or mottled.

Well.—A pocket, open at top, formed inside a water closet bowl at the entrance to the trap.

9. RECOMMENDATIONS

9.1 Control valves (stops).—It is recommended that control valves (stops) be installed with every vitreous china fixture as a means of regulating or stopping the flow of water to supply fittings. This promotes water conservation, tends to reduce noise and splashing, and facilitates servicing of fittings, such as the replacement of faucet washers.

9.2 Maximum water working pressure.—The recommended maximum water working pressure for the operation of vitreous china plumbing fixtures is 85 pounds per square inch.

9.3 Protection of fixtures against abuse.—In line with good plumbing practice, it is recommended that the following paragraph be included in architects' and builders' specifications:

The contractors shall provide protection for the surfaces of all plumbing fixtures from damage before, during, and after their installation and until work is completed and accepted. Contractors and subcontractors shall not use plumbing fixtures for the storage of tools or materials, nor as a support or platform. Every precaution shall be taken during the period of construction to avoid damage to fixtures and fittings.

HISTORY OF PROJECT

General conference.—In response to a request from the industry, and following several preliminary conferences of interested manufacturers, a public conference was held on September 22, 1926, which resulted in the establishment of Simplified Practice Recommendation R52, Staple Vitreous China Plumbing Fixtures. On recommendation by the standing committee, this was expanded and superseded by Commercial Standard CS20-30, Staple Vitreous China Plumbing Fixtures.

Revisions.—The Vitreous China Plumbing Fixtures Association proposed certain revisions in February 1936 which were subsequently approved by the standing committee, and on April 28, 1936, were circulated for written acceptance. As announced to the trade on June 30, 1936, the revised standard was accepted as Commercial Standard CS20-36.

The second revision was similarly proposed on January 8, 1942, and on June 10, 1942, the third edition, CS20-42, was announced. The fourth edition was proposed April 19, 1946, and announced as CS20-47 on June 12, 1947. The fifth edition was proposed March 29, 1948, and announced as CS20-49 on November 15, 1949. In this issue, the designation "seconds" was substituted for "culls."

Further developments in industry practices and manufacturing processes were reflected in a revision proposed on November 3, 1954, by the Vitreous China Plumbing Fixture Association, a predecessor of the present Plumbing Fixture Manufacturers Association. After consideration by the standing committee, and adjustment to meet the committee's recommendations, the standard was circulated on April 18, 1955, for acceptance. Following satisfactory acceptance, the sixth edition of the standard, CS20-56, was announced on March 1, 1956.

Current edition.—Revisions dated March 1, 1961, were submitted by the Plumbing Fixture Manufacturers Association to bring the standard into line with industry practices, particularly with respect to dimensions and other provisions for modern designs having better appearance and greater utility. It was referred to the Standing Committee on November 8, 1961, and was circulated to the trade on July 20, 1962, for acceptance. Upon receipt of acceptances sufficiently representative of all segments of the industry, the seventh edition, CS20-63, was announced to the trade on October 10, 1963, as being effective from November 15, 1963.

Project Manager: A. S. Best, Office of Commodity Standards, National Bureau of Standards.

Technical Advisors: R. S. Wyly and W. N. Harrison, Building Research Division, 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 to the Office of Commodity Standards, National Bureau of Standards which acts as secretary for the committee.

N. R. Held, Kohler Co., Kohler, Wis. (Chairman)
D. J. Quinn, American Radiator & Standard Sanitary Corp., 40 W. 40th St., New York, N.Y. 10018
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E. W. Breese, Hajoca Corporation, Ardmore, Pa. 19008
Edwin F. Maurer, Crichton Corp., F. R. Dengal Div., 1114 N. 4th St., Milwaukee, Wis. 53203
Joe W. Pitts, Brown-Roberts Hardware Co., Alexandria, La.
William H. Leslie, Phoenixville Hospital, Phoenixville, Pa.
Robert J. Piper, American Institute of Architects, 1735 New York Ave., N.W., Washington, D.C. 20006
Richard E. White, National Association of Plumbing Contractors, 1016 20th St., N.W., Washington, D.C. 20006

ACCEPTORS

The manufacturers, distributors, users, and others listed below have individually indicated in writing their acceptance of this Commercial 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 actually comply with its requirements.

Products that meet all requirements of the standard may be identified as such by a certificate, grade mark, or label. Purchasers are encouraged to require such specific representations of compliance, which may be given by the manufacturer whether or not he is an acceptor.

ASSOCIATIONS

(General Support)

American Ceramic Society, Columbus, Ohio
American Hospital Association, Chicago, Ill.
American Institute of Architects, Washington, D.C.
American Specification Institute, Chicago, Ill.
Central Supply Association, Chicago, Ill.
Home Manufacturers Association, Washington, D.C.
National Association of Home Builders, Washington, D.C.
National Association of Plumbing, Heating & Cooling Contractors, Washington, D.C.
Plumbing Fixture Manufacturers Association, Washington, D.C.

FIRMS

AAA Plumbing Pottery Corp., Gadsden, Ala.
Abingdon Potteries, Inc., Abingdon, Ill.
Aeronca Manufacturing Corp., Metal Products Division, Middletown, Ohio (General Support)
Aitchison-Richmond Supply Co., St. Joseph, Mo.
Albuquerque Lumber Co. (Wholesale Division), Albuquerque, N. Mex.
Alexandria, City of, Alexandria, Va.
Allegany County Health Department, Cumberland, Md.
Allegheny County Health Department, Pittsburgh, Pa.
American Plumbers Supply Co., Toledo, Ohio
American Radiator & Standard Sanitary Corp., New York, N.Y.
American Sanitary Manufacturing Co., Abingdon, Ill. (General Support)
Atlas Supply Co., Winston-Salem, N.C.
Baumer, Herbert, Columbus, Ohio
Bayonne Plumbing Supply Co., Inc., Bayonne, N.J.
Bial, George F., Hasbrouck Heights, N.J.
Birdsall, W. A., and Co., Linden, N.J.
Boston, City of, Boston, Mass.
Bradley, J. R., Co., Reno, Nev.
Briggs Manufacturing Co., Warren, Mich.
Brust & Brust, Milwaukee, Wis.
Camlet, J. Thomas, Garfield, N.J.
Careva Co., Inc., York, Pa.
Carrollton Manufacturing Company, Carrollton, Ohio
Carstens Plumbing & Heating Co., Ockley, Iowa
Case Manufacturing, Division of Ogdon Corp., Robinson, Ill.
Central Supply Co., Indianapolis, Ind.
Central Supply Co., Inc., Memphis, Tenn.
Chandler Co., Cedar Rapids, Iowa
Charleston Hardware Co., Charleston, W. Va.
Chicago Pottery Co., Chicago, Ill.
Cleveland Clinic Foundation, Cleveland, Ohio
Clompus, I. M., West Chester, Pa.
Coburn Supply Co., Inc., Beaumont, Tex.
Columbia Pipe & Supply Co., Chicago, Ill.
Cook Plumbing Co., Inc., Ypsilanti, Mich.
Cooper Supply Co., Tulsa, Okla.
Crane Co., Johnstown, Pa.
Crane Supply Co., Denver, Colo.
Cullen Co., Chicago, Ill.

D'Ambly, A. E., Philadelphia, Pa.
Danser Hardware & Supply Co., Clarksburg, W. Va.
Danser Hardware & Supply Co., Weston, W. Va.
Detroit, City of, Department of Buildings & Safety Engineering, Detroit, Mich. (General Support)
Du-Kane Supply Co., Pittsburgh, Pa.
Duluth, City of, Building Inspection Department, Duluth, Minn.
Ebcap Supply Co., Atlanta, Ga.
El Paso Pipe & Supply Co., El Paso, Tex.
Fall River Steam & Gas Pipe Co., Corp., Fall River, Mass.
Field & Shorb Co., Decatur, Ill.
Flannagan, Eric G., and Sons, Henderson, N.C.
Fleck Bros. Co., Camden, N.J.
Florida Automobile & Gas Engine Co., Tampa, Fla.
Fords Porcelain Works, Perth Amboy, N.J.
Georgia Sanitary Pottery, Inc., Atlanta, Ga.
Gerber, Max, Inc., Chicago, Ill.
Gerber Plumbing Fixtures Corp., Chicago, Ill.
Gibbons, M. J., Supply Co., Dayton, Ohio
Glick Supply Co., Marshalltown, Iowa
Globe Machinery & Supply Co., Des Moines, Iowa
Globe Valve Corp., Delphi, Ind.
Hajoca Corp., Ardmore, Pa.
Hefley Co., Battle Creek, Mich.
Hirzel, Charles K., New York, N.Y. (General Support)
Hogner, P. R. L., Fort Lauderdale, Fla.
Holdstein, Milo S., Cleveland, Ohio
Horne-Wilson, Inc., Orlando, Fla.
Hospital Center at Orange, Orange, N.J.
IXL Pump & Manufacturing Co., Inc., Philadelphia, Pa.
Illinois Supply Co., Aurora, Ill.
Ingersoll-Humphries Division, Borg Warner Corp., Mansfield, Ohio
Inland Supply Co., Chicago, Ill.
Iowa Methodist Hospital, Des Moines, Iowa
Jackson, City of, Jackson, Miss.
Jacobson, A. D., Plumbing & Heating Co., Inc., Kansas City, Mo.
Jardine-Plumbing Co., Chillicothe, Ohio
Johnson, J. D., Co., Inc., Pensacola, Fla.
Johnson Plumbing Supply Co., Chicago, Ill.
Just Manufacturing Co., Franklin Park, Ill. (General Support)
Kahn, Albert, Associated Architects and Engineers, Inc., Detroit, Mich.
Keenan Pipe & Supply Co., Los Angeles, Calif.
Keidel Supply Co., Inc., Cincinnati, Ohio
Kennedy Co., Cleveland, Ohio
Kilgore Ceramics Corp., Kilgore, Tex.
Kohler Co., Kohler, Wis.
Kokomo Sanitary Pottery Corp., Kokomo, Ind.
Koller Brothers Co., Cleveland, Ohio

- La Crosse Plumbing Supply Co., La Crosse, Wis.
 Laib Supply Co., Louisville, Ky.
 Lansing Supply Co., Lansing, Mich.
 LeValley McLeod, Inc., Elmira, New York
 Levine, Samuel, Plumbing & Heating Supplies, Inc., New York, N.Y.
 Lincoln, City of, Lincoln, Nebr.
 Loeb, Laurence M., White Plains, N.Y.
 Long Supply Co., Chicago, Ill.
 Los Angeles, City of, Bureau of Public Buildings, Los Angeles, Calif.
- Makielski, Stanislaw J., Charlottesville, Va. (General Support)
 Malone Plumbing Supply Co., Pittsburgh, Pa.
 Mansfield Sanitary, Inc., Perrysville, Ohio
 Marbut Co., Valdosta, Ga.
 May Supply Co., Mobile, Ala.
 McDonald, A. Y., Manufacturing Co., Dubuque, Iowa
 McGowin-Lyons Hardware & Supply Co., Mobile, Ala.
 McPherson Co., Greenville, S.C.
 Mid Valley Supply Co., St. Louis, Mo.
 Miller, Miller & Associates, Terre Haute, Ind.
 Miller Supply Co., Chicago, Ill.
 Milstead Co., Austin, Tex.
 Miner Supply Co., Red Bank, N.J.
 Minneapolis, City of, Department of Buildings & Inspections, Minneapolis, Minn.
 Morrison Supply Co., Fort Worth, Tex.
 Mott Bros. Co., Rockford, Ill.
 Mt. Zion Hospital & Medical Center, San Francisco, Calif.
 Murphy Supply Co., Green Bay, Wis.
 Murray Corporation of America, Eljer Plumbingware Division, Pittsburgh, Pa.
- National Plumbing Fixture Corp., Ellwood City, Pa.
 National Plumbing Pottery, Inc., Zanesville, Ohio
 Norris-Thermador Corp., Vitreous China Division, City of Industry, Calif.
- Parish, Archie G., St. Petersburg, Fla.
 Patterson, W. S., Co., Appleton, Wis.
 Peerless Pacific Co., Portland, Oreg.
 Peerless Pottery, Inc., Evansville, Ind.
 Plumbing & Industrial Supply Co., Inc., Evansville, Ind.
 Plumbers' Supply Co., New Bedford, Mass.
 Plumbers Wholesale Supply Co., Detroit, Mich.
 Poekert, R. A., Brooksville, Fla.
 Prier Brass Manufacturing Co., Kansas City, Mo. (General Support)
 Proctor Community Hospital, Peoria, Ill.
 Provost, Leo P., Manchester, N.H.
- Quality Wood Products, Inc., Miami, Fla.
- Resnikoff, Abraham, New York, N.Y.
 Rex Pipe & Supply Co., Cleveland, Ohio
 Rheem Manufacturing Co., Chicago, Ill.
 Richards Manufacturing Co., Grand Rapids, Mich.
 Robischung-Kiesling Contracting Corp., Houston, Tex.
 Rundle Spence Co., Milwaukee, Wis.
- Salt Lake City Corp., Salt Lake City, Utah. (General Support)
 Schaeffer, Wilson & Evans, Bloomington, Ill.
 Sears, Roebuck and Co., Chicago, Ill.
 Seattle Plumbing Supply Co., Seattle, Wash.
 Shelbina Pottery Co., Inc., Shelbina, Mo.
 Sherwood Brass Works, Detroit, Mich.
 Shirley-Onstad, Inc., Fargo, N. Dak.
 Sloan, Samuel, & Co., Rochester, N.Y.
 Smith & Williams, South Pasadena, Calif.
 Snow & Jones, Inc., Brockton, Mass.
 Southard Supply, Inc., Columbus, Ohio
 Southern States Supply Co., Columbia, S.C.
 Southland Supply Co., Inc., Dallas, Tex.
- Southside Plumbing & Heating Maintenance, Freeport, N.Y.
 Speakman Co., Wilmington, Del.
 Spiegel, Inc., Chicago, Ill.
 Square Supply Co., Knoxville, Tenn.
 Stambaugh, Norman F., & Associates, Atlanta, Ga.
 Stoetzel, Ralph, Inc., Chicago, Ill.
 Superior Supply Co., Cincinnati, Ohio
 Sutter, E. E., Rockville, Md.
 Swan Products Export Co., Philadelphia, Pa.
- Tay-Holbrook Inc., San Francisco, Calif.
 Thackray Supply Inc., Johnstown, Pa.
 Tillman & Booth, Inc., Eugene, Oreg.
 Trimble & Lutz Supply Co., Wheeling, W. Va.
 Tulsa, City of, Plumbing Department, Tulsa, Okla. (General Support)
 Trumbull Plumbing Supply Co., Inc., Warren, Ohio
- United States Plumbing Fixture Corporation, Columbus, Ohio
 U.S. Supply Co., Wichita, Kans.
 Universal-Rundle Corp., New Castle, Pa.
- W-B Engineering Co., Chicago, Ill.
 Wagoner, Harold E., Philadelphia, Pa.
 Walsh, Louis A., Waterbury, Conn.
 Warburton's, Madera, Calif.
 Warner Co., Inc., Denver, Colo.
 Weber, C. L., & Co., Inc., Philadelphia, Pa.
 Webb, F. W., Manufacturing Co., Boston, Mass.
 Welch, Carroll E., Huntington, N.Y.
 Welker-McKee Supply Co., Cleveland, Ohio
 Western Electric Co., Inc., New York, N.Y.
 Western Pottery Co., Inc., Hollydale, Calif.
 Whittier Pipe & Supply Co., Whittier, Calif.
 Witmer, Maurice E., Portsmouth, N.H.
 Wolf, Louis G., Henderson, Ky.
 Woodbridge Sanitary Pottery Corp., Woodbridge, N.J.
 Woolcock Plumbing & Heating Co., Inc., Niagara Falls, N.Y.
 Worthington, Geo., Co., Cleveland, Ohio
- U.S. GOVERNMENT**
- Air Force, Department of Materiel Services Division, Brookley Air Force Base, Ala.
 Agriculture, Department of, Washington, D.C.
 Atomic Energy Commission, Washington, D.C.
- Health, Education, and Welfare, Department of, Washington, D.C.
- Interior, Department of, Washington, D.C.
- Justice, Department of, Bureau of Prisons, Washington, D.C.
- Post Office Department, Washington, D.C.
- Treasury Department, Washington, D.C.
- Veterans Administration, Washington, D.C.
- OTHER COMMERCIAL STANDARDS**
- A list of Commercial Standards may be obtained from the Office of Commodity Standards, National Bureau of Standards, U.S. Department of Commerce, Washington, D.C., 20234. This list includes the purchase price of each publication and gives directions for ordering copies.

ACCEPTANCE OF COMMERCIAL STANDARD

CS20-63 VITREOUS CHINA PLUMBING FIXTURES

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this Commercial Standard.

Date _____

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

WITHDRAWN

Gentlemen:

We believe that this Commercial 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, zone, and State _____

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)

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 standard, where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function, performed by the Department of Commerce in the voluntary establishment of Commercial Standards on a nationwide 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 of the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.