ASME A112.19.1M-1994

(REVISION OF ASME/ANSI A112.19.1M-1987)

REAFFIRMED 1999

FOR CURRENT COMMITTEE PERSONNEL
PLEASE SEE ASME MANUAL AS-11

Enameled Cast Iron Plumbing Fixtures

REAFFIRMED 2004

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AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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Supplement 1-1998
to
ASME A112.19.1M-1994
Enameled Cast Iron Plumbing Fixtures

(This Supplement was approved as an American National Standard on August 27, 1998.)

Paragraph 4.2.5 has been revised. The revised paragraph appears below. Figure 1 is a new figure which supercedes Fig. 1 of the edition. The new figure appears on the overleaf.

4.2.5 Slip Resistance. The bathing surface of a bathtub shall be treated in such a manner that it shall comply with ASTM F 462. Treatment shall start 2 in. measured from all side and wall radii and 3 in. measured from the centerline of the drain and from the compound corner radii. See Fig. 1.

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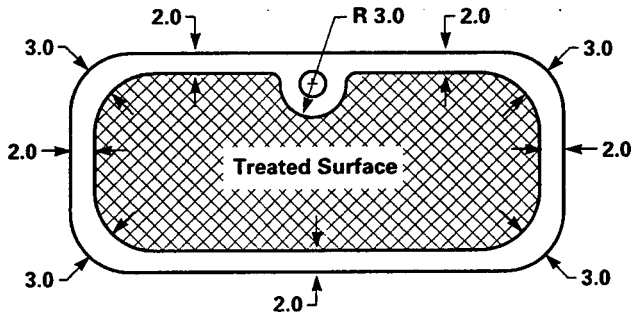
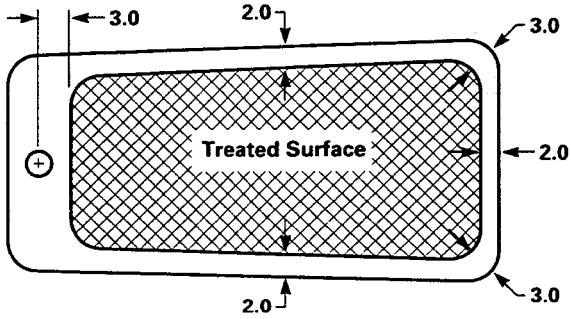
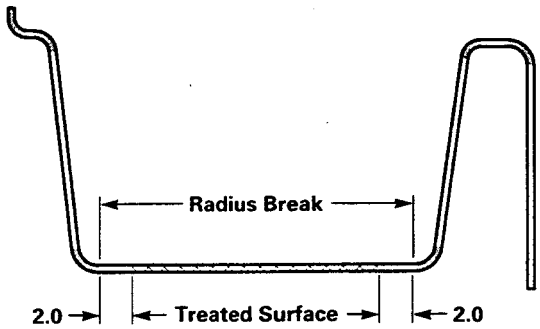


Center Drain Tub



Left or Right Hand
Drain Bathtubs



Cross-Section View

FIG. 1 SLIP RESISTANCE COVERAGE IN BATHTUB SURFACES

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Errata
to
ASME A112.19.1M-1994
Enameled Cast Iron Plumbing Fixtures

The Errata corrections listed below apply to ASME A112.19.1M-1994, Enameled Cast Iron Plumbing Fixtures. This Errata to the 1994 edition is being issued in the form of replacement pages. Corrections are incorporated directly into the affected pages. Replace or insert the pages listed. It is also advisable that this cover page be retained for reference. The pages show the corrections given below. The pages not listed are the reverse sides of the listed pages and contain no changes.

Page	Location	Change
25–27	Appendix A	*Revised in its entirety*

NOVEMBER 1996

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APPENDIX A
GOVERNMENT REQUIREMENTS

(This Appendix is not part of ASME A112.19.1M-1994 and is included for Federal Government use only.)

A1 SCOPE

This Appendix covers requirements of the Federal Government for the procurement of enameled cast iron plumbing fixtures.

A2 APPLICABLE DOCUMENTS

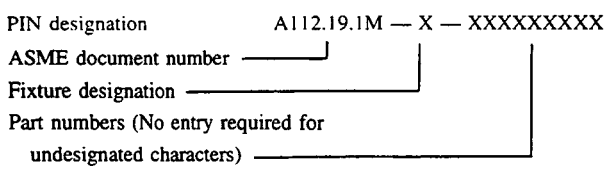
The following document, of the issues in effect on date of invitation for bids or request for proposal, forms a part of this Appendix to the extent specified herein.

ANSI/ASQC Z1.4[1] — Sampling Procedures and Tables for Inspection by Attributes

A3 REQUIREMENTS

A3.1 Part or Identifying Number (PIN)

The plumbing fixtures covered by ASME A112.19.1M-1994 shall be identified by a PIN. This part number is intended for cataloging and ordering purposes (see para. A6) and not for surface marking on the product. The PIN shall be written as shown:



A3.1.1 Part Numbers for Bathtub (Fixture Designation = 1)

(a) First character denotes type.

A = Corner bathtub with straight front
B = Corner bathtub with extended front
C = Recess bathtub with straight front
D = Recess bathtub with extended front
E = Drop-in or Island type (with tiling flange)
F = Drop-in or Island type (without tiling flange)

(b) Second character denotes location of overflow and drain outlet.

1 = Left hand
2 = Right hand

(c) Third character denotes nominal size (inches).

Size	Length	Width: Straight Front	Width: Extended Front	Height
A	54	30	32	14
B	54	32	33	14
C	54	30	32	16
D	54	32	33	16
E	60	30	32	14
F	60	32	33	14
G	60	30	32	16
H	60	32	33	16
J	66	30	32	16
K	66	32	33	16

(d) Fourth character denotes rough-in.

1 = Conventional (through the floor drain)
2 = Nonconventional (above the floor drain)

(e) Fifth character denotes color.

A = White
B = As specified (see para. A6)

A3.1.2 Part Numbers for Lavatory (Fixture Designation = 2)

(a) First character denotes type.

A = Straight-front apron with straight back
B = Shelf-back with apron
C = Slab-type
D = Flat-rim
E = Self-rimming
F = Pedestal-mounted

(b) Second character denotes overflow.

1 = Required
2 = Not required

(c) Third character denotes nominal size (inches) and shape.

A = 19 × 17 Rectangular
B = 20 × 18 Rectangular
C = 21 × 18 Rectangular
D = 21 × 19 Rectangular
E = 21¾ × 17 Rectangular

[1] ASQC standards are available from the American Society for Quality Control, 611 East Wisconsin Ave., Milwaukee, WI 53201.

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F = 22 × 19 Rectangular
G = 24 × 18 Rectangular
H = 24 × 20 Rectangular
J = 24 × 21 Rectangular
K = 21¾ × 17 Oval
L = 19¼ × 16¼ Oval
M = 20¼ × 17¼ Oval
N = 18 Round
P = 19 Round

(d) Fourth character denotes faucet hole punching.

1 = Three holes (2-inch centers)
2 = Three holes (4-inch centers)

(e) Fifth character denotes faucet hole location.

A = Top
B = Wall

(f) Sixth character denotes mounting.

1 = Countertop
2 = Wall-hung
3 = Pedestal

(g) Seventh character denotes splashback.

A = Required, with manufacturer's standard height
B = Required, with specified height (see para. A6)
C = Not required

(h) Eighth character denotes color.

1 = White
2 = As specified (see para. A6)

A3.1.3 Part Numbers for Sinks (Fixture Designation = 3)

(a) First character denotes type (drain outlets located at center).

A = Kitchen sink
B = Wash sink
C = Service sink
D = Laundry tray
E = Sink and laundry tray combination

(b) Second character denotes style.

1 = Flat-rim
2 = Flat-rim ledge
3 = Self-rimming
4 = Roll-rim
5 = Tile-edge

(c) Third character denotes nominal size (inches).

Type A (Kitchen Sink)

A = 24 × 16
B = 24 × 18
C = 24 × 20
D = 24 × 21
E = 25 × 22
F = 30 × 18
G = 30 × 20
H = 30 × 21
J = 30 × 30
K = 32 × 20
L = 32 × 21
M = 32 × 22
N = 33 × 22
P = 42 × 21

Type B (Wash Sink)

A = 48 × 18
B = 60 × 18
C = 72 × 18

Type C (Service Sink)

A = 22 × 18
B = 24 × 20

Type D (Laundry Tray)

A = 24 × 20
B = 24 × 21
C = 24 × 23

Type E (Sink and Laundry Tray Combination)

A = 42 × 20 (Reversible)
B = 42 × 21 (Sink at left)
C = 42 × 21 (Sink at right)
D = 42 × 24 (Sink at left)
E = 42 × 24 (Sink at right)
F = 42 × 25 (Sink at left)
G = 42 × 25 (Sink at right)

(d) Fourth character denotes number of compartments.

1 = Single
2 = Double
3 = Triple

(e) Fifth character denotes splashback.

A = Required, with manufacturer's standard height
B = Required, with specified height (see para. A6)
C = Not required

(f) Sixth character denotes mounting.

1 = Countertop
2 = Cabinet top
3 = Legs
4 = Wall-hung
5 = Wall-hung with pedestal
6 = Trap standard

(g) Seventh character denotes faucet hole punching.

A = No hole
B = Two holes
C = Three holes
D = Four holes

(h) Eighth character denotes faucet hole location.

1 = Not applicable
2 = Top
3 = Wall
4 = Inclined panel

(i) Ninth character denotes color.

A = White
B = As specified (see A6)

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A3.2 Standard Commercial Product

The plumbing fixtures shall, as a minimum, be in accordance with the requirements of ASME A112.19.1M-1994. Additional or better features which are not specifically prohibited by this standard but which are a part of the manufacturer's standard commercial product, shall be included in the plumbing fixtures being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

A4 QUALITY ASSURANCE PROVISIONS

A4.1 Responsibility for Inspection

The contractor shall be responsible for the performance of all inspection requirements as specified herein. The contractor may use his own or any other facilities suitable for the performance of the inspection requirements unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the standard where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

A4.2 Quality Conformance Inspection

When specified (see para. A6), a quality conformance inspection shall be required. The quality conformance inspection shall be performed on each sample selected (see para. A4.3) to determine compliance with ASME A112.19.1M-1994 and shall include the following:

(a) Examination. This element of inspection shall encompass all visual examination and dimensional measurements. Noncompliance with any specified requirements shall constitute one defect. Examination shall be based on inspection level S-4 and an Acceptable Quality Level (AQL) of 2.5 percent defective.

(b) Test. Each sampled fixture shall be tested in accordance with the applicable performance test in this standard. Failure to pass any test constitutes one defect. Test shall be based on inspection level S-2 and an AQL of 4.0% defective.

(c) Preparation for Delivery Inspection. Preparation for delivery shall be inspected for compliance with the requirements of Section A5.

A4.3 Sampling

Sampling and inspection procedures shall be in accordance with ANSI/ASQC Z1.4. The unit of product shall be one complete fixture. All fixtures of the same description offered for delivery at one time shall be considered a lot for the purpose of inspection. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for a complete inspection. Resubmitted lots shall be reinspected using tightened inspection. If the rejected lot was screened, reinspection shall be limited to the defect causing rejection. If the lot was reprocesses, reinspection shall be performed for all defects. Rejected lots shall be separate from new lots, and shall be clearly identified as reinspected lots.

A5 PREPARATION FOR DELIVERY

The packaging, packing, and marking shall be as specified in the contract or purchase order (see para. A6).

A6 ORDERING DATA

Acquisition documents should identify the following:

(a) title, number, and date of the standard;

(b) PIN designation (see para. A3.1);

(c) color [see paras. A3.1.1(e), A3.1.2(h), and A3.1.3(i)];

(d) splashback height [see paras. A3.1.2(g) and A3.1.3(e)];

(e) when a quality conformance inspection is required (see para. A4.2);

(f) preparation for delivery (see para. A5).

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AN AMERICAN NATIONAL STANDARD

Enameled Cast Iron Plumbing Fixtures

ASME A112.19.1M-1994

(REVISION OF ASME/ANSI A112.19.1M-1987)

The American Society of Mechanical Engineers

345 East 47th Street, New York, N.Y. 10017

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Date of Issuance: December 30, 1994

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FOREWORD

(This Foreword is not part of ASME A112.19.1M-1994.)

The first generally accepted commercial standard for enameled cast iron plumbing fixtures was published by the Commodity Standards Division of the National Bureau of Standards on April 25, 1940 and was designated as CS 77-40. Revisions of the standard were published in 1951, 1956, and 1963.

When it was deemed necessary to revise and update CS 77-63, Enameled Cast Iron Plumbing Fixtures, because the National Bureau of Standards was phasing out its Commodity Standards Division, the American National Standards Committee A112, Standardization of Plumbing Materials and Equipment, agreed to assume responsibility for the project. The standard was assigned to Panel 19 — Plumbing Fixtures, of the A112 Standards Committee, for revision. The National Bureau of Standards released CS 77-63 on September 24, 1963. ANSI A112.19.1-1973 was published by the Administrative Secretariat, The American Society of Mechanical Engineers, on February 21, 1973.

In accordance with American National Standards Institute (ANSI) procedures for management and coordination of American National Standards, which require updating of ANSI standards every 5 years, in 1978 Panel 19 assumed the responsibility of revising and updating ANSI A112.19.1-1973. ANSI A112.19.1M-1979 was the result of the panel's deliberation and was approved by the American National Standards Institute on July 18, 1979.

The section on abrasion resistance of the enameled surfaces, previously found in the 1979 edition of the standard, was deleted in the 1987 edition due to difficulties in obtaining test equipment to evaluate this condition. The enameled fixtures subcommittee is attempting to find an alternate test on this issue. The results of their studies may be published as an addendum or in the next edition of the Standard.

The Definitive Part Numbering System (see Appendix A) was added to the Standard in 1987 to facilitate procurement of these products by Federal agencies. It has been updated in this edition.

Following approval by the A112 Committee, the Standard was approved as an American National Standard by ANSI on April 3, 1987.

This latest revision of the Standard was developed by Panel 19 Working Group 1 on Enameled Cast Iron Fixtures, which had been formed to revise and update this Standard. The revision was subsequently approved by Panel 19 and the ASME A112 Standards Committee, Standardization of Plumbing Materials and Equipment. Thereafter, ANSI approved A112.19.1M-1994 as an American National Standard on August 19, 1994.

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Standardization of Plumbing Materials and Equipment

(The following is the roster of the Committee at the time of approval of this Standard.)

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Appendix

A A Definitive Part Numbering System for ASME A112.19.1M Enameled Cast Iron Plumbing Fixtures 25

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ENAMELED CAST IRON PLUMBING FIXTURES

1 PURPOSE

The purposes of this Standard are to establish a nationally recognized document for enameled cast iron plumbing fixtures for the guidance of manufacturers, distributors, and purchasers, and to promote better understanding between suppliers and users regarding these fixtures.

2 SCOPE

2.1 General

This Standard applies to enameled cast iron plumbing fixtures and includes requirements for materials, construction, inspection, testing, marking, and definitions. Types and sizes of fixtures currently in general use and demand are given for enameled cast iron bathtubs, lavatories, sinks, and laundry trays. (See Section 5.)

2.2 Reference Standards

The following standards are referenced in this document. Unless otherwise specified, the latest edition of each standard shall apply.

ASTM C 282 Test Method for Acid Resistance of Porcelain Enamels (Citric Acid Spot Test)

ASTM C 346 Test Method for 45-deg Specular Gloss of Ceramic Materials

ASTM E 11 Specification for Wire-Cloth Sieves for Testing Purposes

ASTM E 1347 Test Method for Directional Reflectance Factor, 45-deg 0-deg, of Opaque Specimens by Broad-Band Filter Reflectometry

ASTM F 462 Consumer Safety Specification for Slip-Resistant Bathing Facilities

3 DEFINITIONS

3.1 Miscellaneous

bathing surface — the portion of the sump of a bathtub on which, by either common usage or design, a bather might step or stand while bathing or showering, and which is exclusive of ledges or rims

enameled cast iron (as applied to plumbing fixtures covered by this Standard) — a product cast from molten iron and coated with enamel fused to the metal. The enamel coating is hard, glossy, opaque, and acid resistant, and in combination with the solid cast iron base produces a rigid, durable product.

inspection window — a circular opening 3 in. (76.20 mm) in diameter cut from a small sheet of any flexible material, such as rubber or paper, for convenience in sliding over irregular surfaces to determine segregation. A segregation is a collection of blemishes within the inspection window greater than permitted by Table 1.

ledge back — a flat elevated surface at the back of a lavatory, sink, or laundry tray, not more than 2 in. (50.80 mm) higher than the rim and extending the full length of the fixture, on which the supply fitting can be mounted and small articles placed; or a similar construction with a center panel suitable for mounting a supply fitting

shelf back — a flat elevated surface at the back of a lavatory higher than 2 in. (50.80 mm) above the rim and extending the full length of the fixture, on the top or front of which the supply fitting can be mounted and on which small articles can be placed; or a similar construction with a center panel formed into the shelf suitable for mounting a supply fitting on either a horizontal or an inclined surface

slab type lavatory — a lavatory without an elevated back with faucets located on top of the slab. Wall brackets are required when lavatory is supported by cast iron legs.

3.2 Blemishes

dimple — a slight depression of the enamel surface

lump — a raised portion of the enamel surface

specks — particles of foreign matter that produce areas of contrasting color on the surface

speck, small — a speck $^{1}/_{100}$ in. to $^{1}/_{64}$ in. (0.25 mm to 0.40 mm) in maximum dimension

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speck, medium — a speck over 1/64 in. to 1/32 in. (0.40 mm to 0.79 mm) in maximum dimension

speck, large — a speck over 1/32 in. to 1/16 in. (0.79 mm to 1.59 mm) in maximum dimension

4 GENERAL REQUIREMENTS

4.1 Material

The enameled cast iron fixtures shall be of one piece, high grade cast iron, and the castings shall be strong, sound, true to form, and free from porosity, cracks, and other defects that may affect the serviceability of the fixtures. The cast iron shall form a suitable base for the enamel coating and shall be not less than 1/8 in. (3.18 mm) thick at all points 1 in. (25.40 mm) or more from any edge.

4.2 Enameling

4.2.1 General. The enameled surface of each fixture shall be acid-resisting enamel, thoroughly fused to the cast iron base. Except on slip-resistant surfaces, the enamel shall be glossy. It shall be of uniform color and free from flaws that affect the appearance or may affect the serviceability of the fixtures.

4.2.2 Specular Gloss and Reflectance. The enameled surface, visible after installation, shall be glossy to the extent that it will have a 45 deg (0.79 radian) specular gloss of not less than 45 when tested in accordance with para. 7.3. If white, the reflectance of the cover coat shall be not less than 72% when determined in accordance with para. 7.4. Blemishes shall be limited in accordance with the method of inspection specified in para. 6.1.

4.2.3 Enameling and Other Treatment. The thickness of the enamel, as measured on a flat surface at least 1 in. (25.40 mm) from any edge, shall be not less than 0.025 in. (0.64 mm). Prior to enameling, the surface to be enameled shall be treated with filler as required to fill voids, and then the entire surface shall be treated with ground cost. Any rework process after enameling which exposes base metal surfaces shall be factory treated with rust inhibitor.

4.2.4 Acid Resistance. The enamel shall be acid resisting throughout the entire thickness of the enamel coating and shall meet the Class A requirements of ASTM C282 when tested in accordance with para. 7.2 of this Standard.

4.2.5 Slip Resistance. The bathing surface of a bathtub shall be treated in such manner that it shall comply with ASTM F 462. Treatment shall start 1 in. from all radii centerlines (tangent point). See Fig. 1.

4.3 Dimensions and Tolerances

Fixtures shall conform to the applicable dimensions and tolerances given herein. Where not otherwise indicated, a tolerance of ±3% shall apply. Limit dimensions (maximum and minimum) shall not have any additional tolerances beyond the limits specified.

4.3.1 Apron Bathtubs. The tolerance on length of apron bathtubs shall be ±1/2 in. (12.70 mm).

4.3.2 Pitch. The pitch of the bottom of the bathtub toward the drain shall be not less than 1/4 in./ft (20.83 mm/m) and not more than 7/16 in./ft (36.46 mm/m). All fixtures shall be so constructed that they drain.

4.4 Warpage

Warpage of edges that set against the wall or floor, and edges that set into cabinets or countertops, shall not exceed 1/16 in./ft (5.21 mm/m) when tested according to the method given in para. 7.1. Warpage of all other edges shall not exceed 3/32 in./ft (7.82 mm/m) when tested according to the same method.

4.5 Rim Styles

Rim styles for drop-in bathtubs, lavatories, and kitchen and bar sinks may be self rimming, flat rim, or tile edge at the discretion of the manufacturer.

4.6 Illustrations

The illustrations (Figs. 1 through 38) are shown for convenience in identifying the various fixtures or locating dimensions or both. The illustrations are not intended to indicate standard or required designs.

5 FIXTURE TYPES AND SIZES

The fixture types and sizes described in this Section are commonly used and as such should provide representative selection for ordinary applications. While it is considered that the use of such fixture types and sizes, where feasible, will be beneficial through simplification of production practices and in facilitating identification by the consumer, other types or sizes may be provided.

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5.1 Bathtubs — Common Types and Sizes

5.1.1 Corner Bathtubs. Concealed end, containing overflow and drain outlets, may be right or left. Front may be straight or extended. Length is 5 ft (1524.00 mm); height is 16 in. (406.40 mm). A tiling bead shall be provided per Fig. 6. (See Figs. 2 and 6.)

5.1.2 Recess Bathtubs, 16 in. (406.40 mm) Height. Overflow and drain outlets may be right or left. Front may be straight or extended. Lengths are 4½, 5, and 5½ ft (1371.60, 1524.00, and 1676.40 mm); height is 16 in. (406.40 mm). A tiling bead shall be provided per Fig. 6. (See Figs. 3 and 6.)

5.1.3 Recess Bathtubs, 14 in. (355.60 mm) Height. Overflow and drain outlets may be right or left. Front may be straight or extended. Lengths are 4½ and 5 ft (1371.60 and 1524.00 mm); height is 14 in. (355.60 mm). A tiling bead shall be provided per Fig. 7. (See Figs. 4 and 7.)

5.1.4 Recess Bathtubs, 16 in. (406.40 mm) Height. With raised bottom 2¾ in. (69.85 mm) above-the-floor roughing to permit installation of horizontal drain to wall. Tiling beads shall be provided per Fig. 8. (See Fig. 8.)

5.1.5 Drop-in or Island Type Bathtubs. Dimensions for island type bathtubs shall be at the discretion of the manufacturer. Dimensions for overflows may be per para. 5.1.7. Tiling bead requirements shall be per para. 5.1.8. (See Fig. 5.)

5.1.6 Special Purpose Bathtubs. Special purpose bathtubs may comply with the minimum height and width dimensions listed in paras. 5.1.1 through 5.1.4.

5.1.7 Bathtub Outlet and Overflow Dimensions. Dimensions for finished overflow and drain outlets (after enameling) for corner and recess bathtubs, 16 in. (406.40 mm) in height, are shown in Fig. 6; for recess bathtubs, 14 in. (355.60 mm) in height, in Fig. 7; and for above-the-floor roughing, 16 in. (406.40 mm) in height, in Fig. 8.

5.1.8 Flanges and Tiling Beads. Bathtubs intended for installation against a vertical surface (wall) shall incorporate a continuously raised flange or bead not less than 5/16 in. (8 mm) above the rim at any point. The raised flange may be:

(a) integral with the bathtub;

(b) added to an island tub in the factory; or

(c) field installed using an optional installation kit. Each kit shall include installation instructions and all necessary parts and fasteners. The effectiveness of the moisture seal between the field-installed flange and the fixture shall be tested in accordance with Section 7.6.

5.2 Lavatories — Common Types and Sizes

5.2.1 Straight-Front Apron Lavatories With Straight Back. Height of back is 3½ to 7 in. (88.90 to 177.80 mm); sizes are 19 in. × 17 in. (482.60 mm × 431.80 mm), 20 or 21 in. × 18 in. (508.00 or 533.40 mm × 457.20 mm), and 22 in. × 19 in. (558.80 mm × 482.60 mm). (See Fig. 9.)

5.2.2 Shelf-Back Lavatories With Apron. Height of back is 2 in. (50.80 mm) minimum. Sizes are 19 in. × 17 in. (482.60 mm × 431.80 mm), 22 in. × 19 in. (558.80 mm × 482.60 mm), and 24 in. × 18 in. (609.60 mm × 457.20 mm). (See Fig. 10.)

5.2.3 Slab Type Lavatories. Sizes are 20 in. × 18 in. (508.00 mm × 457.20 mm) and 24 in. × 20 or 21 in. (609.60 mm × 508.00 or 533.40 mm). (See Fig. 11.)

5.2.4 Rectangular Flat-Rim Lavatories. Size is 20 in. × 18 in. (508.00 mm × 457.20 mm). (See Fig. 12.)

5.2.5 Round Flat-Rim Lavatories. Sizes are 18 in. and 19 in. (457.20 mm and 482.60 mm) diameter. (See Fig. 13.)

5.2.6 Rectangular Self-Rimming Lavatories. Size is 21 in. × 19 in. (533.40 mm × 482.60 mm). (See Fig. 14.)

5.2.7 Round Self-Rimming Lavatories. Size is 19 in. (482.60 mm) diameter. (See Fig. 15.)

5.2.8 Oval Flat-Rim Lavatories. Size is 19¼ in. × 16¼ in. (488.95 mm × 412.75 mm). (See Fig. 16.)

5.2.9 Oval Self-Rimming Lavatories. Sizes are 19¼ in. × 16¼ in. (488.95 mm × 412.75 mm) and 20 ¼ in. × 17¼ in. (514.35 mm × 438.15 mm). (See Fig. 17.)

5.2.10 Pedestal Mounted Lavatories. Size is 21¾ in. × 17 in. (552.45 mm × 431.80 mm). (See Fig. 18.)

5.2.11 Faucet Hole Dimensions and Spacing

(a) Center-Set Fittings. Faucet hole dimensions and spacing for center-set fittings are shown in Fig. 19, Detail A.

(b) Separate Faucets and Combination Fittings. Faucet hole dimensions and spacing for separate fau-

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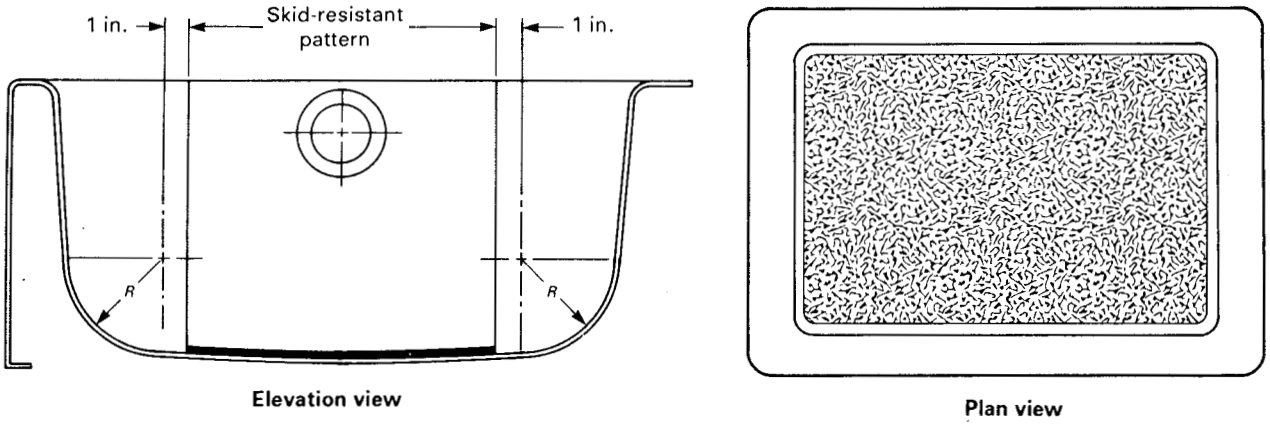
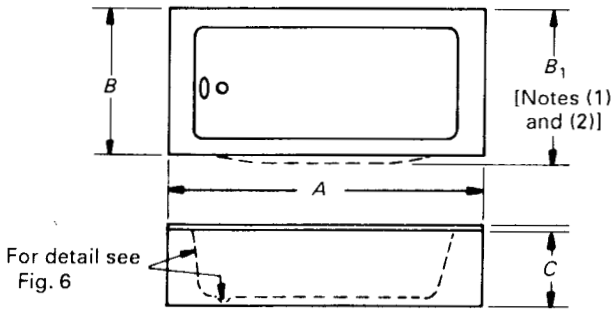


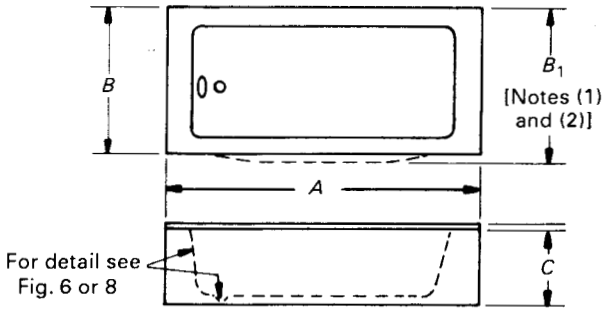
FIG. 1 LOCATION OF SLIP-RESISTING SURFACE
(Ref. para. 4.2.5)



Sizes, ft (mm)	Dimensions, in. (mm)		
A	*B*	B_1 [Note (2)]	*C*
5 (1524)	30–32 (762.00–812.80)	32–33 (812.80–838.20)	16 (406.40)

NOTES:
(1) Design of bathtubs is at option of manufacturer within limits of requirements given herein.
(2) Front of bathtubs may be straight or extended; dimension B_1 applies only to bathtubs with extended front.

FIG. 2 CORNER BATHTUBS, RIGHT OR LEFT
(Ref. para. 5.1.1)



Sizes, ft (mm)	Dimensions, in. (mm)		
A	*B*	B_1 [Note (2)]	*C*
4½, 5, 5½ (1372, 1524, 1676)	30–32 (762.00–812.80)	32–33 (812.80–838.20)	16 (406.40)

NOTES:
(1) Design of bathtubs is at option of manufacturer within limits of requirements given herein.
(2) Front of bathtubs may be straight or extended; dimension B_1 applies only to bathtubs with extended front.

FIG. 3 RECESS BATHTUBS, 16 in. HEIGHT, RIGHT OR LEFT
(Ref. para. 5.1.2)

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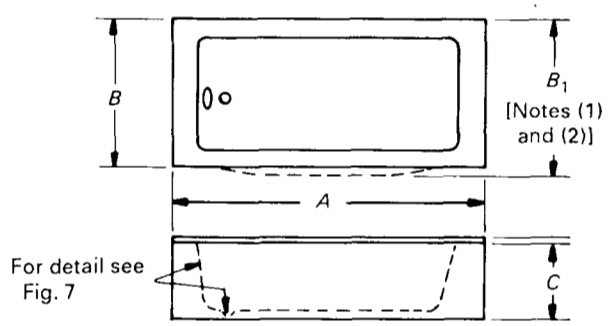
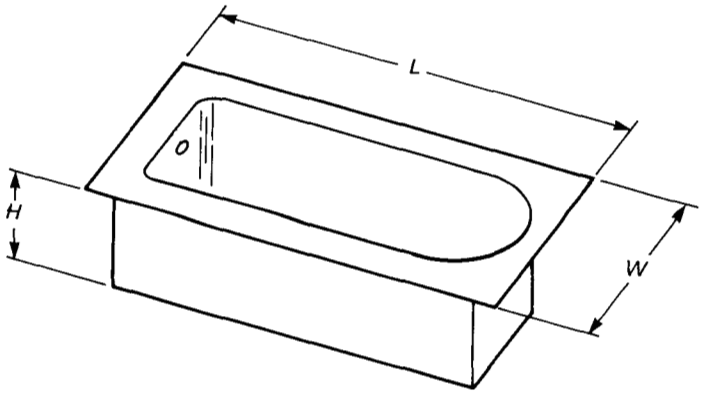


Sizes, ft (mm)	Dimensions, in. (mm)		
A	*B*	B_1 [Note (2)]	*C*
4½, 5 (1372, 1524)	30 (762.00)	30–32 (762.00–812.80)	14 (355.60)

NOTES:
(1) Design of bathtubs is at option of manufacturer within limits of requirements given herein.
(2) Front of bathtubs may be straight or extended; dimension B_1 applies only to bathtubs with extended front.

FIG. 4 RECESS BATHTUBS, 14 in. HEIGHT, RIGHT OR LEFT (Ref. para. 5.1.3)



Sizes, ft (m)	Dimensions, in. (mm)	
L	*W*	*H*
4½, 5 (1.4, 1.5)	30 min. (762 min.)	14–18 (356–457)

GENERAL NOTE: Panel is optional with drop-in models.

FIG. 5 DROP-IN OR ISLAND TYPE BATHTUBS (Ref. para. 5.1.5)

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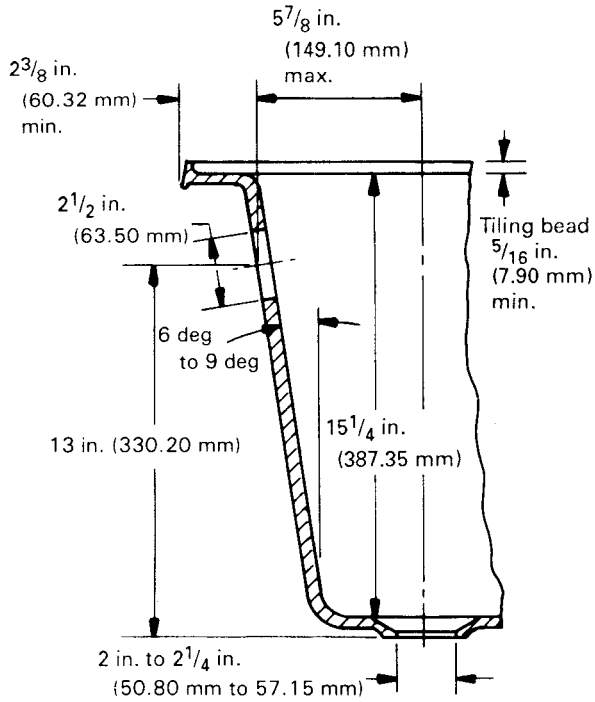

FIG. 6 OUTLET AND OVERFLOW DIMENSIONS FOR 16 in. HEIGHT BATHTUBS (Ref. Figs. 2 and 3, paras. 5.1.1 and 5.1.2)

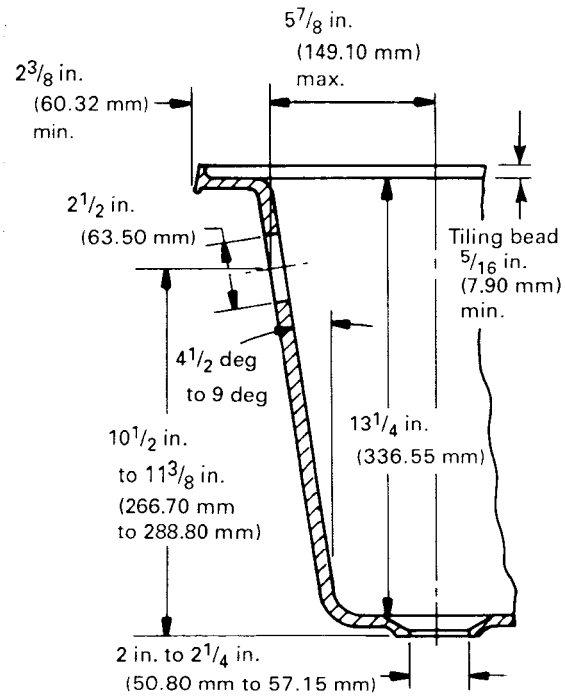

FIG. 7 OUTLET AND OVERFLOW DIMENSIONS FOR 14 in. HEIGHT BATHTUBS (Ref. Fig. 4 and para. 5.1.3)

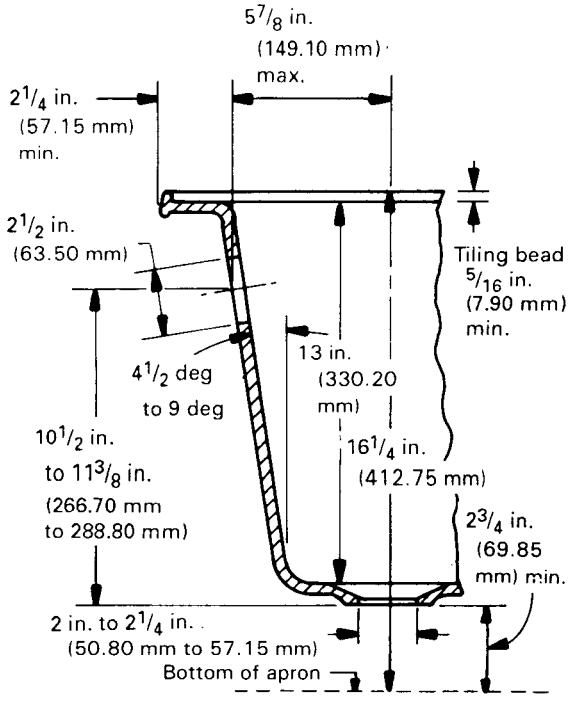

FIG. 8 OUTLET AND OVERFLOW DIMENSIONS FOR 16 in. HEIGHT BATHTUBS WITH OUTLET FOR ABOVE-THE-FLOOR ROUGHING (Ref. Fig. 3 and para. 5.1.4)

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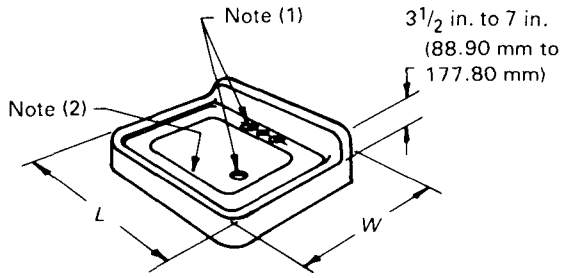
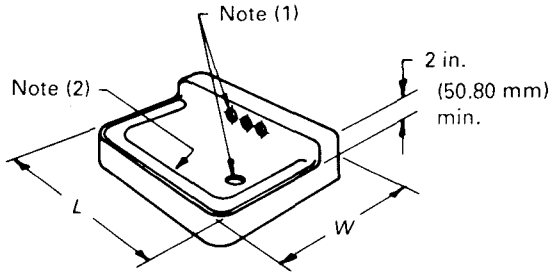


Sizes, in. (mm)	
L	W
19 (482.60)	17 (431.80)
20 or 21 (508.00 or 533.40)	18 (457.20)
22 (558.80)	19 (482.60)

NOTES:
(1) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.
(2) When provided, location of overflow is optional (see para. 5.2.13).

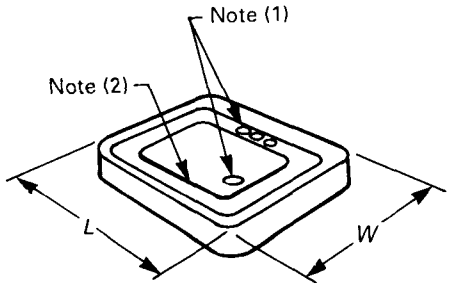
FIG. 9 STRAIGHT-FRONT APRON LAVATORIES WITH STRAIGHT BACK (Ref. para. 5.2.1)



Sizes, in. (mm)	
L	W
19 (482.60)	17 (431.80)
22 (558.80)	19 (482.60)
24 (609.60)	18 (457.20)

NOTES:
(1) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.
(2) When provided, location of overflow is optional (see para. 5.2.13).

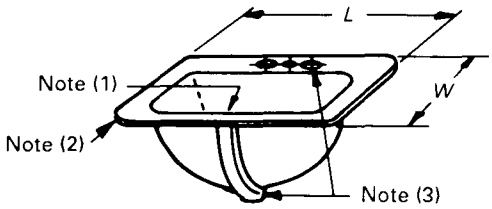
FIG. 10 SHELF-BACK LAVATORIES WITH APRON (Ref. para. 5.2.2)



Sizes, in. (mm)	
L	W
20 (508.00)	18 (457.20)
24 (609.60)	20 or 21 (508.00 or 533.40)

NOTES:
(1) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.
(2) When provided, location of overflow is optional (see para. 5.2.13).

FIG. 11 SLAB TYPE LAVATORIES (Ref. para. 5.2.3)



Sizes, in. (mm)	
L	W
20 (508.00)	18 (457.20)

NOTES:
(1) When provided, location of overflow is optional (see para. 5.2.13).
(2) Corner radius 1½ in. + 0 − ⅛ in. (38.10 mm + 0 − 3.18 mm).
(3) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.

FIG. 12 RECTANGULAR FLAT-RIM LAVATORIES (Ref. para. 5.2.4)

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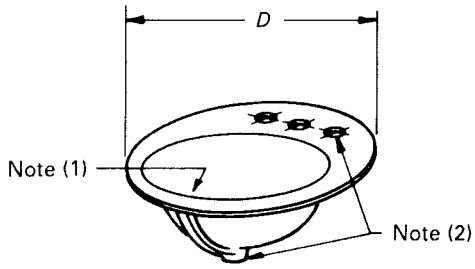
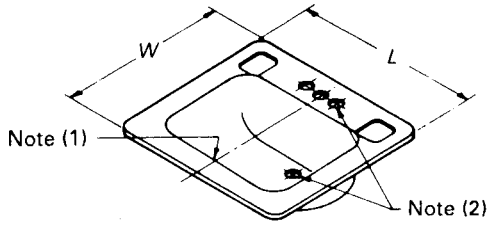


Sizes, in. (mm)
D
18 (457.20)
19 (482.60)

NOTES:
(1) When provided, location of overflow is optional (see para. 5.2.13).
(2) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.

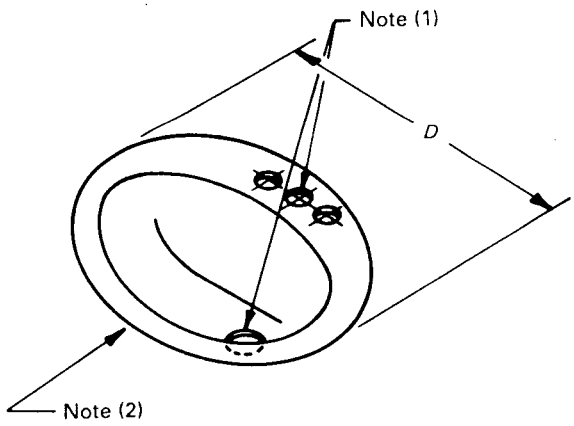
FIG. 13 ROUND FLAT-RIM LAVATORIES (Ref. para. 5.2.5)



Sizes, in. (mm)	
L	*W*
21 (533.40)	19 (482.60)

NOTES:
(1) When provided, location of overflow is optional (see para. 5.2.13).
(2) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.

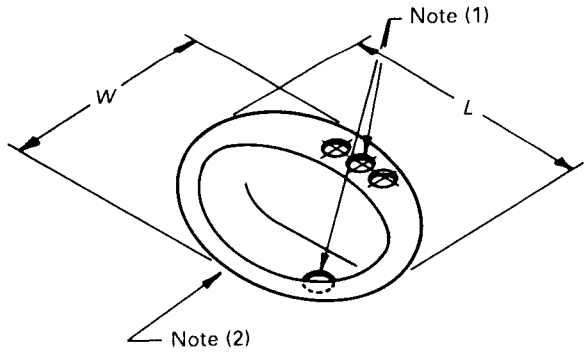
FIG. 14 RECTANGULAR SELF-RIMMING LAVATORIES (Ref. para. 5.2.6)



Sizes, in. (mm)
D
19 (482.60)

NOTES:
(1) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.
(2) When provided, location of overflow is optional (see para. 5.2.13).

FIG. 15 ROUND SELF-RIMMING LAVATORIES (Ref. para. 5.2.7)



Sizes, in. (mm)	
L	*W*
19¼ (488.95)	16¼ (412.75)

NOTES:
(1) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.
(2) When provided, location of overflow is optional (see para. 5.2.13).

FIG. 16 OVAL FLAT-RIM LAVATORIES (Ref. para. 5.2.8)

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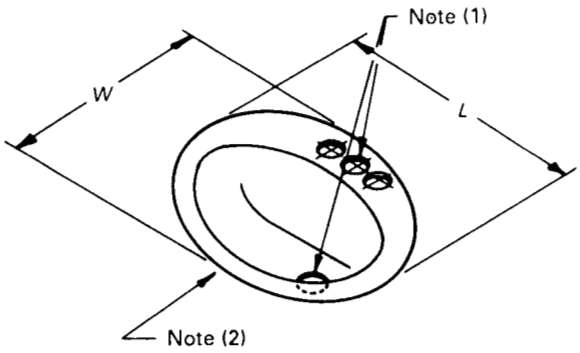
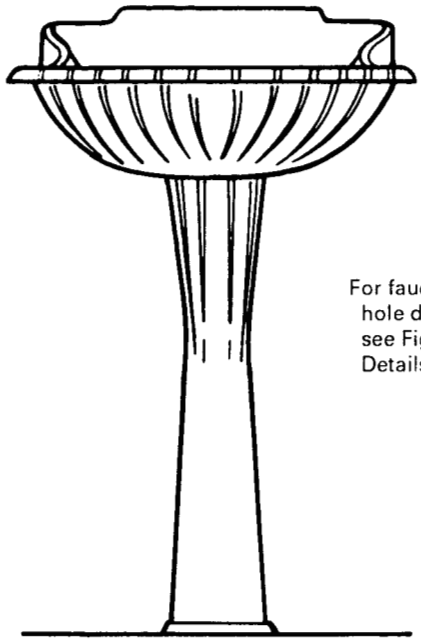


Sizes, in. (mm)	
L	*W*
19¼ (488.95)	16¼ (412.75)
20¼ (514.35)	17¼ (438.15)

NOTES:
(1) Supply openings and outlet are as shown in Fig. 19, Details A, B, and C.
(2) When provided, location of overflow is optional (see para. 5.2.13).

FIG. 17 OVAL SELF-RIMMING LAVATORIES (Ref. para. 5.2.9)



For faucet and outlet hole dimensions, see Fig. 19, Details A, B, and C

GENERAL NOTE:
Dimensions and designs are variable based upon manufacturer's design.

FIG. 18 PEDESTAL MOUNTED LAVATORIES (Ref. para. 5.2.10)

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cets and combination fittings are shown in Fig. 19, Detail B.

5.2.12 Lavatory Outlet Dimensions. The dimensional limits for outlets of lavatories with overflow are shown in Fig. 19, Detail C.

5.2.13 Lavatory Overflows. The provision of an overflow and its location shall be at the option of the manufacturer. If an overflow is provided, it shall meet the following requirements:

(a) its minimum net cross-sectional area at any point shall be $1^1/_8$ in.^{2} (725.80 mm^2); or

(b) it shall be capable of preventing the lavatory from overflowing for a minimum of 5 minutes when tested in accordance with para. 7.5.

5.3 Kitchen Sinks — Common Types and Sizes

5.3.1 Flat-Rim Ledge Kitchen Sinks. Sizes are 24 in. × 21 in. (609.60 mm × 533.40 mm) and 30 in. × 21 in. (762.00 mm × 533.40 mm). (See Fig. 20.)

5.3.2 Flat-Rim Ledge Kitchen Sinks, Double Compartment. Sizes are 32 in. × 20 or 21 in. (812.80 mm × 508.00 or 533.40 mm) and 42 in. × 21 in. (1066.80 mm × 533.40 mm). (See Fig. 21.)

5.3.3 Flat-Rim Kitchen Sinks With Center Outlet. Sizes are 24 in. × 16 in. (609.60 mm × 406.40 mm), 24 in. × 18 in. (609.60 mm × 457.20 mm), 30 in. × 18 in. (762.00 mm × 457.20 mm), 24 in. × 20 in. (609.60 mm × 508.00 mm), and 30 in. × 20 in. (762.00 mm × 508.00 mm). (See Fig. 22.)

5.3.4 Flat-Rim Double Compartment Kitchen Sinks. Size is 32 in. × 20 in. (812.80 mm × 508.00 mm). (See Fig. 23.)

5.3.5 Self-Rimming Kitchen Sinks With Center Outlet. Sizes are 24 in. × 21 in. (609.60 mm × 533.40 mm) and 25 in. × 22 in. (635.00 mm × 558.80 mm). (See Fig. 24.)

5.3.6 Self-Rimming Double Compartment Kitchen Sinks. Size is 32 or 33 in. × 22 in. (812.80 or 838.20 mm × 558.80 mm). (See Fig. 25.)

5.3.7 Self-Rimming Triple Compartment Kitchen Sinks. Size is 42 to 44 in. × 22 in. (1066.80 to 1117.60 mm × 558.80 mm). (See Fig. 26.)

5.3.8 Self-Rimming Corner Kitchen Sinks. Sizes are at manufacturer's discretion. (See Fig. 27.)

5.3.9 Tile-Edge Kitchen Sinks. Sinks are 24 to 30 in. × 21 in. (609.60 mm to 762.00 mm × 533.40 mm). (See Fig. 28.)

5.3.10 Tile-Edge Double Compartment Kitchen Sinks. Size is 32 in. × 21 in. (812.80 mm × 533.40 mm). (See Fig. 29.)

5.3.11 Tile-Edge Triple Compartment Kitchen Sinks. Sizes are 40 to 44 in. × 21 in. (1016.00 to 1117.60 mm × 533.40 mm). (See Fig. 30.)

5.3.12 Kitchen Sink Outlet Dimensions. The dimensional limits for outlets of kitchen sinks are shown in Fig. 31.

5.3.13 Corner Radius. The radius of the outside corners of rims of flat-rim ledge sinks designed for countertop installations is noted on the drawings.

5.3.14 Tile Edge. The typical tile edge is shown in Figs. 28–30.

5.4 Wash Sinks — Common Types and Sizes

5.4.1 Wall-Hanging Wash Sinks With Back, With or Without Pedestals. Sizes are 4 ft × 18 in. (1219.20 mm × 457.20 mm), 5 ft × 18 in. (1524.00 mm × 457.20 mm), and 6 ft × 18 in. (1828.80 mm × 457.20 mm); height of back is 8 in. (203.20 mm). (See Fig. 32.)

5.4.2 Outlet Dimensions. For outlet dimensions, see Fig. 33.

5.5 Service Sinks — Common Types and Sizes

5.5.1 Roll-Rim Service Sinks With Back, on Trap Standard. Common sizes are 22 in. × 18 in. (558.80 mm × 457.20 mm) and 24 in. × 20 in. (609.60 mm × 508.00 mm); depth is 10 to 14 in. (254.00 to 355.60 mm); height of back is 8 to 12 in. (203.20 to 304.80 mm). (See Fig. 34.)

5.5.2 Outlet Dimensions. For outlet dimensions, see Fig. 35.

5.6 Sink and Laundry Tray Combinations — Common Types and Sizes

5.6.1 Ledge Sink and Laundry Tray Combinations With Back. For installation over cabinets or on legs. Sink may be at right or left of tray. Size is 42 in. × 24 or 25 in. (1066.80 mm × 609.60 or 635.00 mm). (See Fig. 36.)

5.6.2 Flat-Rim Sink and Laundry Tray Combinations, Reversible. Sink compartment may be at

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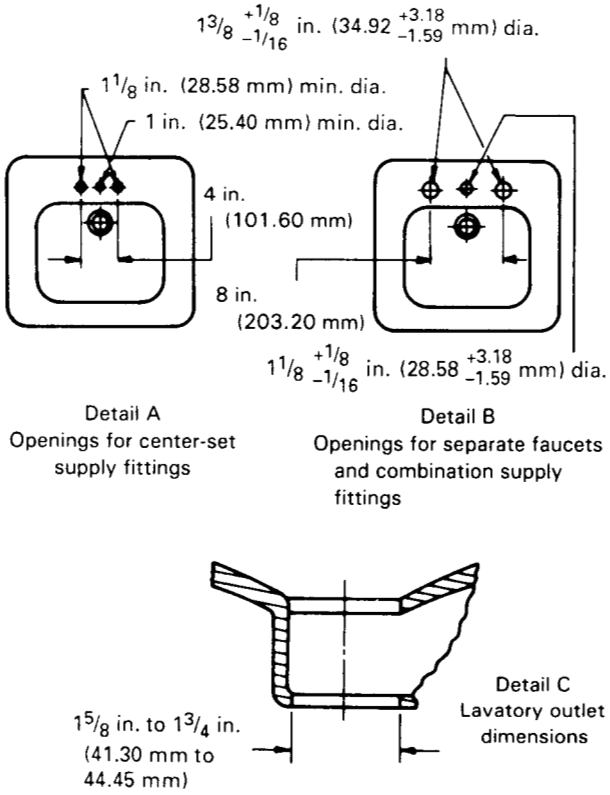
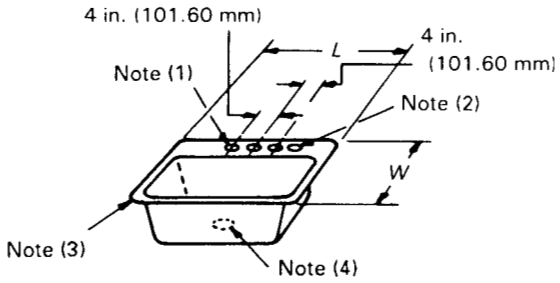


FIG. 19 LAVATORY SUPPLY OPENINGS AND OUTLET DETAILS (Ref. paras. 5.2.11 and 5.2.12)



Sizes, in. (mm)	
L	***W***
24 (609.60)	21 (533.40)
30 (762.00)	21 (533.40)

NOTES:
(1) All holes are $1^{3}/_{8}$ in. $\pm 1/8$ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be $4^{1}/_{2}$ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Corner radius is $1^{1}/_{2}$ in. $+0\ -1/8$ in. (38.10 mm $+0\ -3.18$ mm).
(4) Outlet is shown in Fig. 31.

FIG. 20 FLAT-RIM LEDGE KITCHEN SINKS (Ref. para. 5.3.1)

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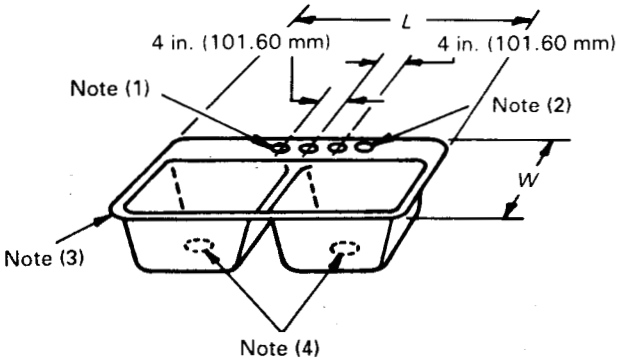
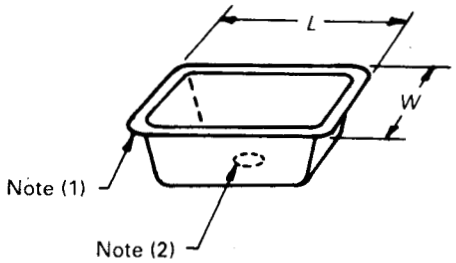


Sizes, in. (mm)	
L	*W*
32 (812.80)	20–21 (508.00–533.40)
42 (1066.80)	21 (533.40)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Corner radius is 1½ in. +0 −⅛ in. (38.10 mm +0 −3.18 mm).
(4) Outlet is shown in Fig. 31.

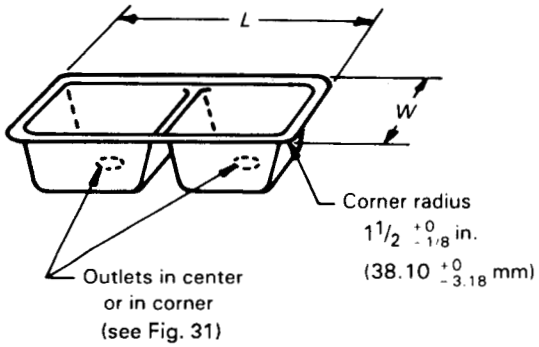
FIG. 21 FLAT-RIM LEDGE KITCHEN SINKS, DOUBLE COMPARTMENT (Ref. para. 5.3.2)



Sizes, in. (mm)	
L	*W*
24 (609.60)	16 (406.40)
24 (609.60)	18 (457.20)
30 (762.00)	18 (457.20)
24 (609.60)	20 (508.00)
30 (762.00)	20 (508.00)

NOTES:
(1) Corner radius is 1½ in. +0 −⅛ in. (38.10 mm +0 − 3.18 mm).
(2) Outlet is shown in Fig. 31.

FIG. 22 FLAT-RIM KITCHEN SINKS WITH CENTER OUTLET (Ref. para. 5.3.3)



Sizes, in. (mm)	
L	*W*
32 (812.80)	20 (508.00)

FIG. 23 FLAT-RIM DOUBLE COMPARTMENT KITCHEN SINKS (Ref. para. 5.3.4)

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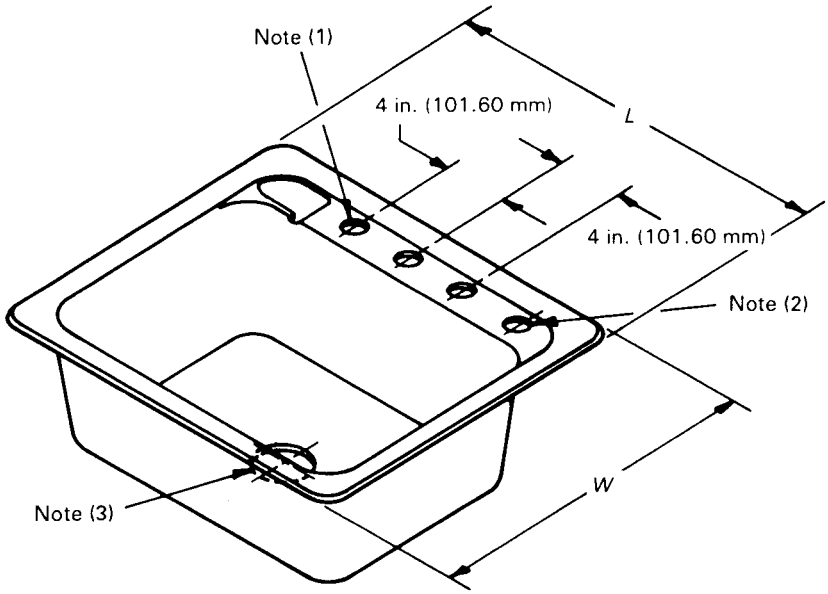

Sizes, in. (mm)	
L	*W*
24 (609.60)	21 (533.40)
25 (635.00)	22 (558.80)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Outlet is shown in Fig. 31.

FIG. 24 SELF-RIMMING KITCHEN SINKS WITH CENTER OUTLET (Ref. para. 5.3.5)

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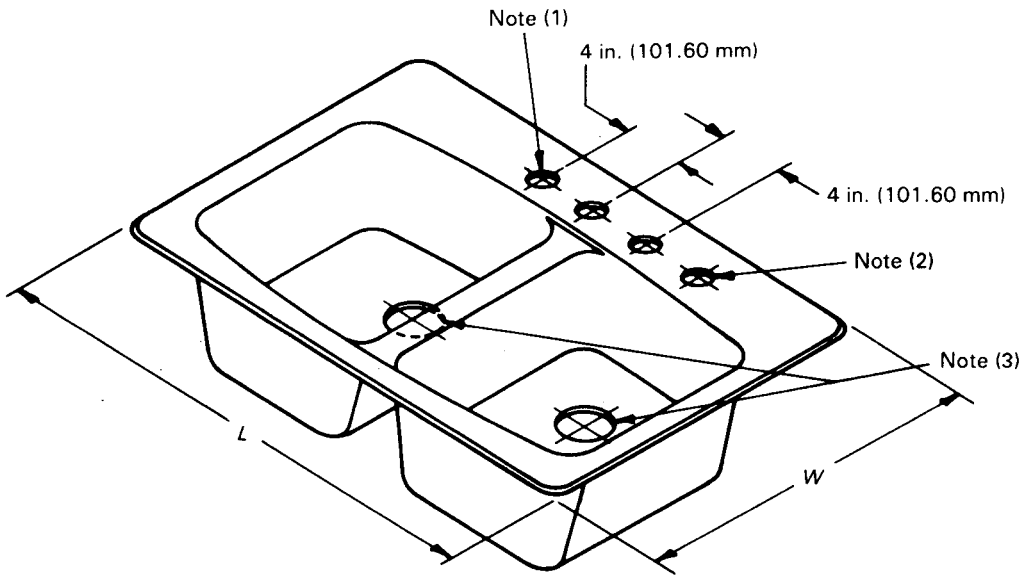

Sizes, in. (mm)	
L	*W*
32–33 (812.80–838.20)	22 (558.80)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Outlet is shown in Fig. 31.

FIG. 25 SELF-RIMMING DOUBLE COMPARTMENT KITCHEN SINKS (Ref. para. 5.3.6)

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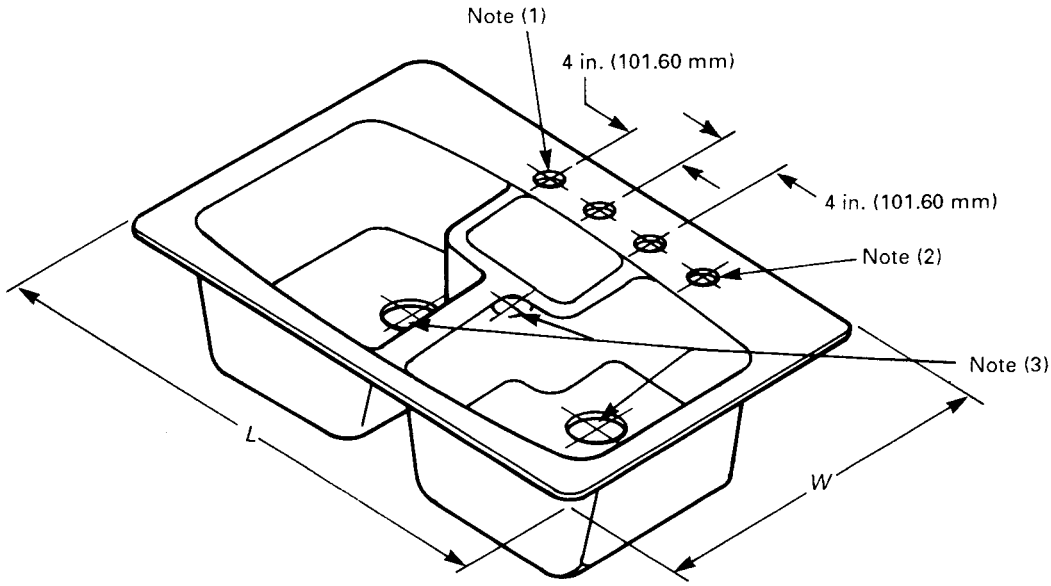
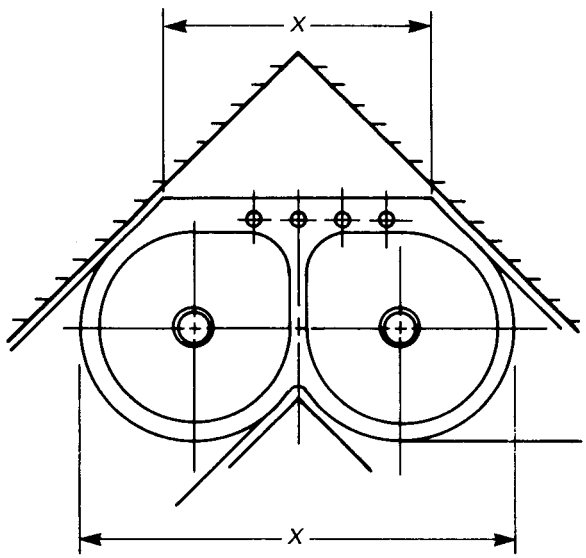


Sizes, in. (mm)	
L	*W*
42–44 (1066.80–1117.60)	22 (558.80)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Outlet is shown in Fig. 31.

FIG. 26 SELF-RIMMING TRIPLE COMPARTMENT KITCHEN SINKS
(Ref. para. 5.3.7)



GENERAL NOTE: Dimensions (*X*) are at manufacturer's discretion.

FIG. 27 SELF-RIMMING CORNER KITCHEN SINKS
(Ref. para. 5.3.8)

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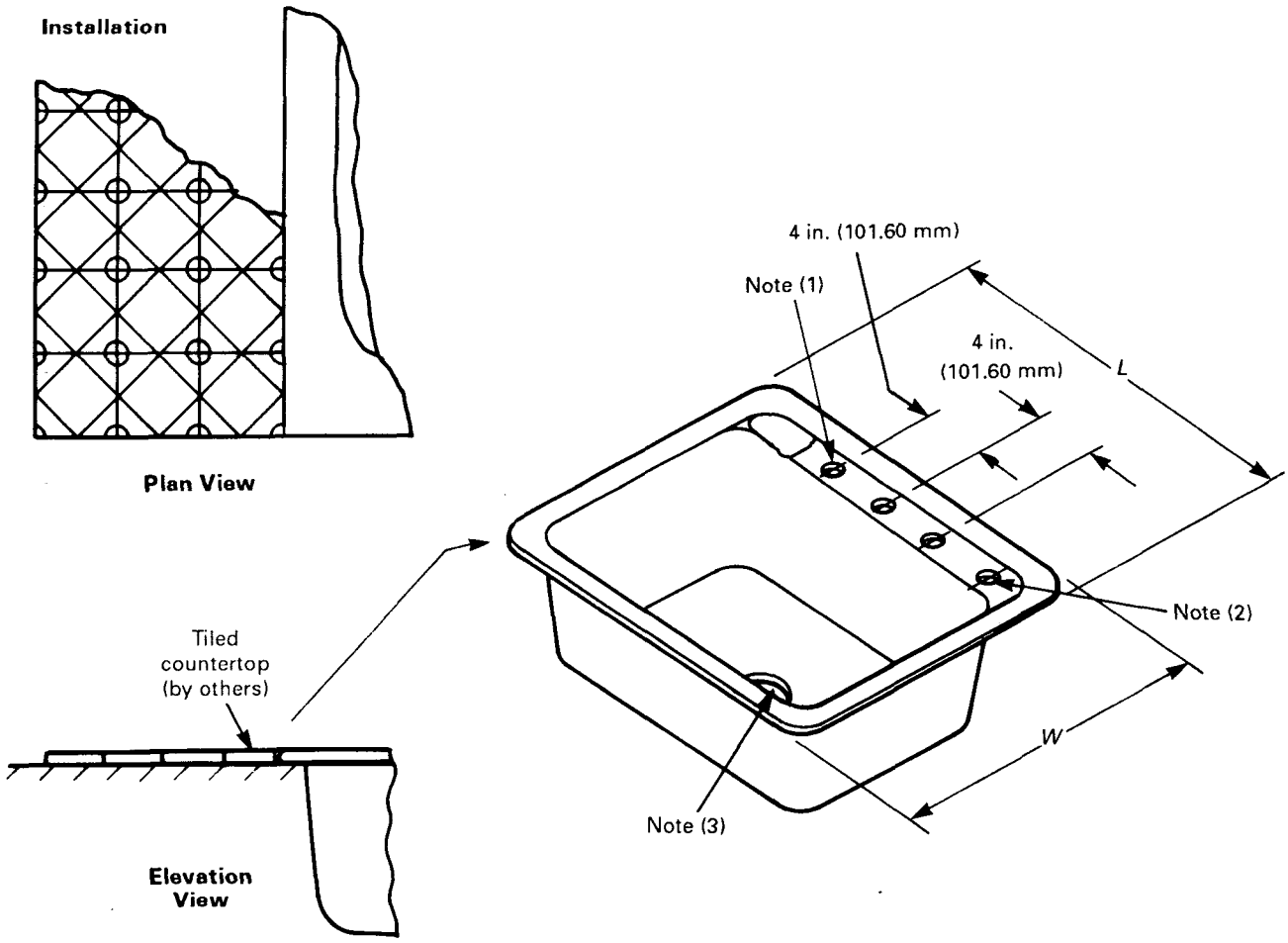

Sizes, in. (mm)	
L	*W*
24–30 (609.60–762.00)	21 (533.40)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Outlet is shown in Fig. 31.

FIG. 28 TILE-EDGE KITCHEN SINKS
(Ref. para. 5.3.9)

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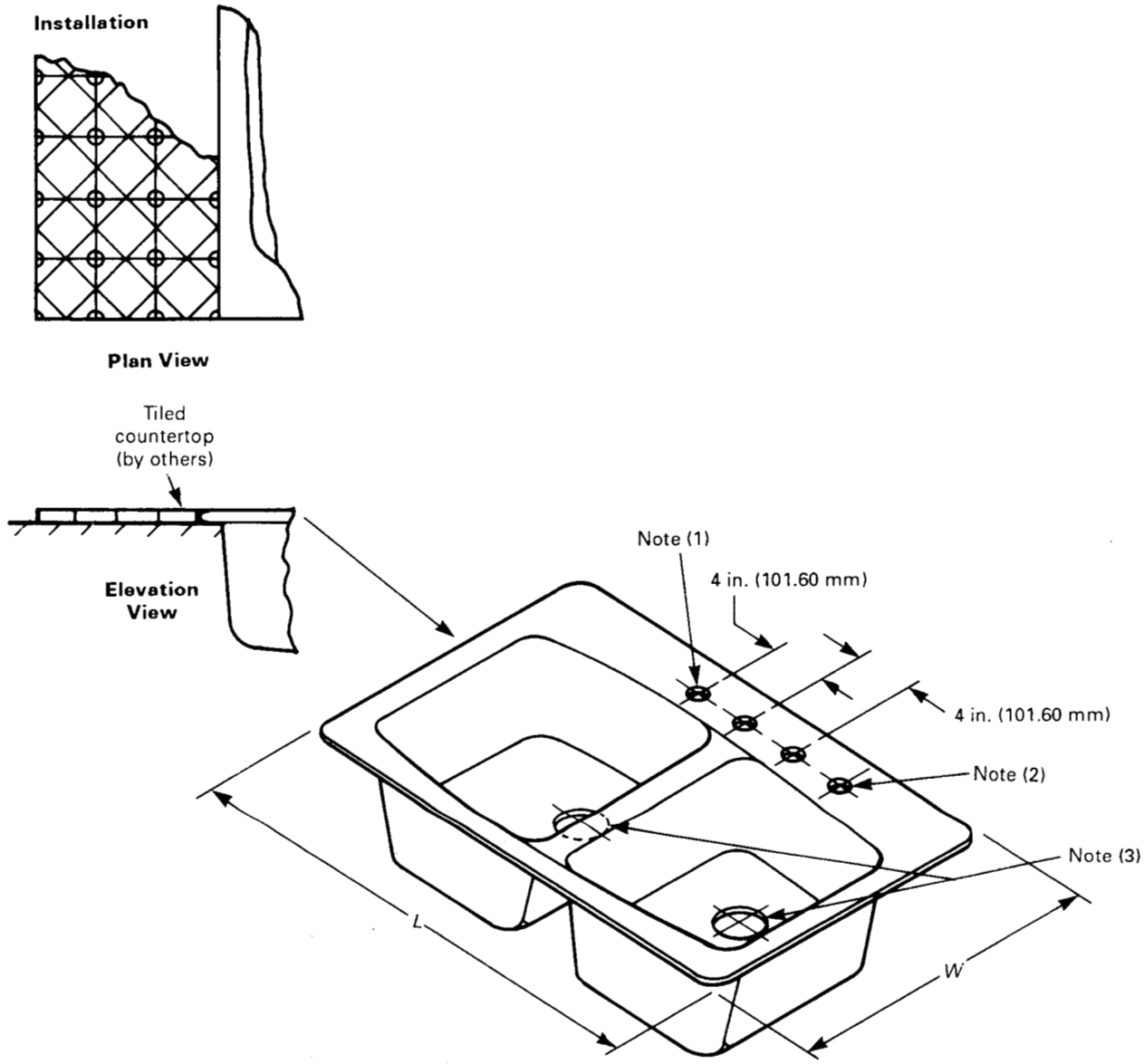

Sizes, in. (mm)	
L	*W*
32 (812.80)	21 (533.40)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Outlet is shown in Fig. 31.

FIG. 29 TILE-EDGE DOUBLE COMPARTMENT KITCHEN SINKS (Ref. para. 5.3.10)

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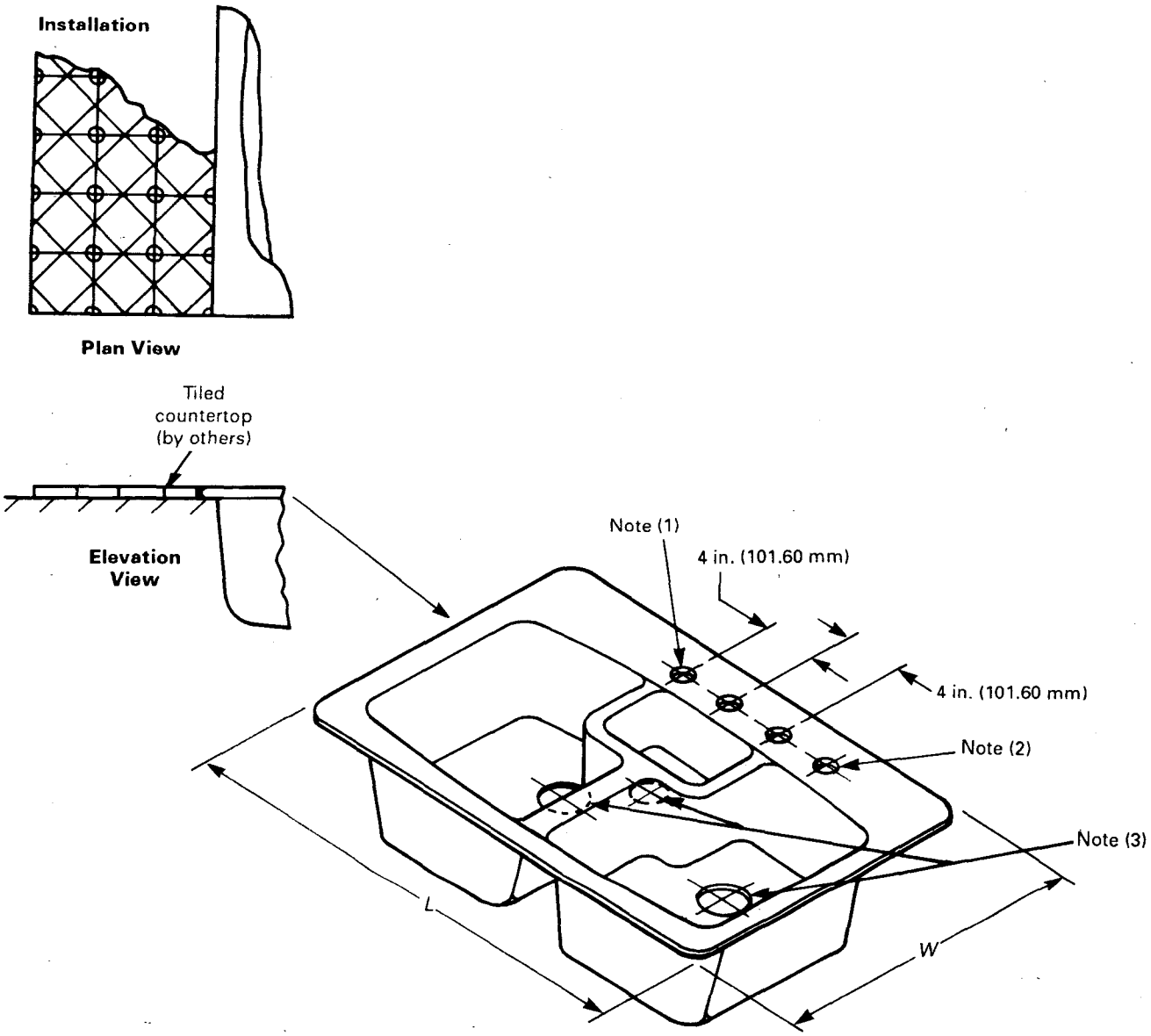

Sizes, in. (mm)	
L	*W*
40–44 (1016.00–1117.60)	21 (533.40)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm) in diameter. Supply holes may be in an inclined panel above ledge, in which case distance between centers may be 4½ in. (114.30 mm).
(2) Additional holes for accessories (e.g., sprayer, soap dispenser, air gap fitting, instant hot water dispenser, etc.) may be provided at the option of the manufacturer.
(3) Outlet is shown in Fig. 31.

FIG. 30 TILE-EDGE TRIPLE COMPARTMENT KITCHEN SINKS
(Ref. para. 5.3.11)

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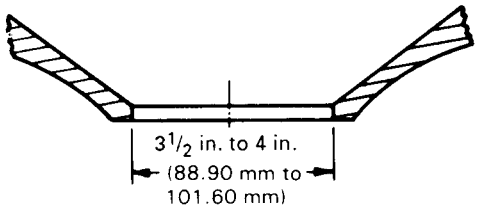
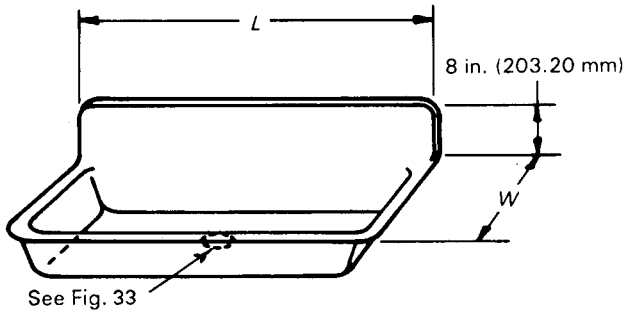


FIG. 31 KITCHEN SINK OUTLET DIMENSIONS
(Ref. paras. 5.3.12 and 5.6.4)



Sizes	
L ft (mm)	*W* in. (mm)
4 (1219)	18 (457.20)
5 (1524)	18 (457.20)
6 (1829)	18 (457.20)

FIG. 32 WALL-HANGING WASH SINKS WITH BACK, WITH OR WITHOUT PEDESTALS
(Ref. para. 5.4.1)

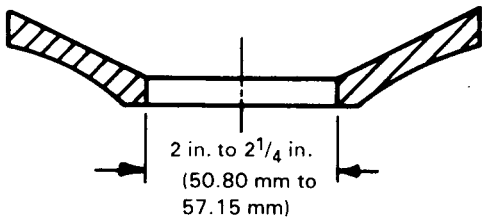


FIG. 33 WASH SINK AND LAUNDRY TRAY
(Ref. paras. 5.4.2, 5.6.4, and 5.7.3)

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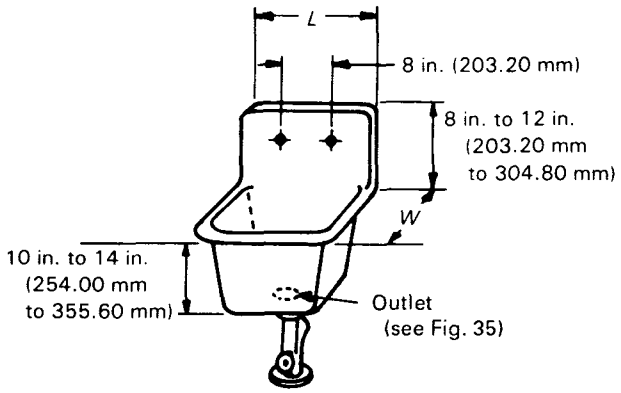


Sizes, in. (mm)	
L	*W*
22 (558.80)	18 (457.20)
24 (609.60)	20 (508.00)

FIG. 34 ROLL-RIM SERVICE SINKS WITH BACK, ON TRAP STANDARD (Ref. para. 5.5.1)

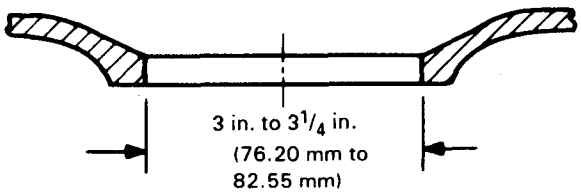
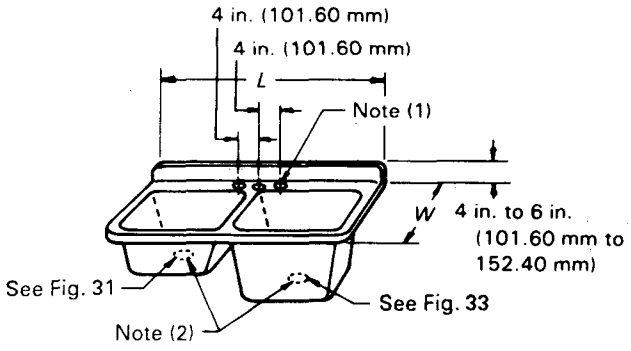


FIG. 35 SERVICE SINK OUTLET (Ref. para. 5.5.2)



Sizes, in. (mm)	
L	*W*
42 (1066.80)	24–25 (609.60–635.00)

NOTES:
(1) All holes are 1⅜ in. ±⅛ in. (34.92 mm ±3.18 mm).
(2) Outlets are in center or in corner.

FIG. 36 LEDGE SINK AND LAUNDRY TRAY COMBINATIONS WITH BACK, SINK AT RIGHT OR LEFT (Ref. para. 5.6.1)

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right or left of tray. Size is 42 in. × 20 in. (1066.80 mm × 508.00 mm). (See Fig. 37.)

5.6.3 Flat-Rim Sink and Laundry Tray Combinations, With Ledge. Sink compartment may be at right or left of tray. Size is 42 in. × 21 in. (1066.80 mm × 533.40 mm). (See Fig. 38.)

5.6.4 Outlet Dimensions. For outlet dimensions, see Figs. 31 and 33.

5.7 Laundry Trays — Common Types and Sizes

5.7.1 Flat-Rim Laundry Trays, Single Compartment. Size is 24 in. × 20 in. (609.60 mm × 508.00 mm). (See Fig. 39.)

5.7.2 Flat-Rim Laundry Trays, Single Compartment With Ledge. Sizes are 24 in. × 21 in. (609.60 mm × 533.40 mm) and 24 in. × 23 in. (609.60 mm × 584.20 mm). (See Fig. 40.)

5.7.3 Outlet Dimensions. For outlet dimensions, see Fig. 33.

6 INSPECTION RULES

6.1 Surface Inspection for Blemishes

The fixture shall be examined with the eyes of the observer about 2 ft (610 mm) from the surface observed. The light source shall be partially diffused daylight, or substantially equivalent artificial light with a luminous intensity near the inspection surface of not less than 100 footcandles (1076 lux) nor greater than 200 footcandles (2152 lux). No actual count or measure of blemishes should be attempted except in case of doubt since, with practice, dimensional limits and numbers can readily be gaged by the eye. Some waviness in an enameled surface is unavoidable and is not cause for rejection; other imperfections shall be limited to the allowable blemishes listed in Table 1.

TABLE 1 ALLOWABLE BLEMISHES

Description	Size or Appearance	Maximum Number Allowed per Inspection Window	Maximum Number Allowed per Fixture
Specks	Small	4	Not to be counted
...	Medium	2	8
...	Large	1	5
Dimples	...	2	8
Lumps	...	2	8

7 METHODS OF TEST

7.1 Warpage

To test the fixture, it 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 limits. 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 contact the flat surface and holding the fixture firmly 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 the horizontal plane by more than the specified tolerance and satisfactorily comes within the warpage limitations.

7.2 Tests for Acid Resistance

7.2.1 Method of Test. The enamel shall be subjected to the citric acid test as specified below. The test for subsurface acid resistance may be made at the option of the purchasing agency or the inspector.

7.2.2 Citric Acid Test. A fresh test solution made of 1 part citric acid crystals to 10 parts water by weight shall be applied to the surface of the enamel for 15 minutes, at the end of which period, after washing and drying, the enamel shall meet the requirements as set forth in para. 4.2.4. The water and acid solution shall have been stored for not less than 3 hours immediately preceding the tests in an atmosphere of 80°F ± 10°F (26.67°C ± 3.33°C). The test shall be applied to clean areas, in pools consisting of several drops, and covered with a watch glass to hold the solution in place.

7.2.3 Subsurface Acid Resistance Test. The test is ordinarily made on a flat or nearly flat specimen 2 in. (50.80 mm) × 2 in. (50.80 mm) cut from the fixture.

(a) Grind off the enamel so as to expose a smooth, oblique section of the coating and part of the metal base. Specimens cut from the article may be ground along a cut edge. The oblique section of enamel shall be 3/4 in. ± 1/8 in. (19.05 mm ± 3.17 mm) wide. The abrasive used in grinding shall pass a No. 140 sieve (ASTM E 11) and shall be moistened during grinding.

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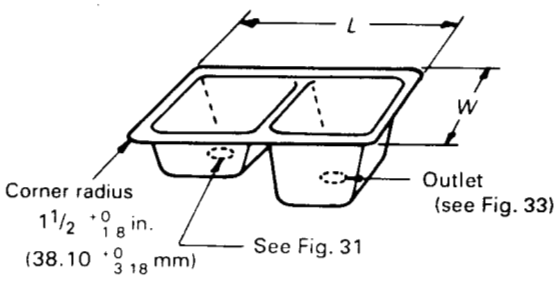
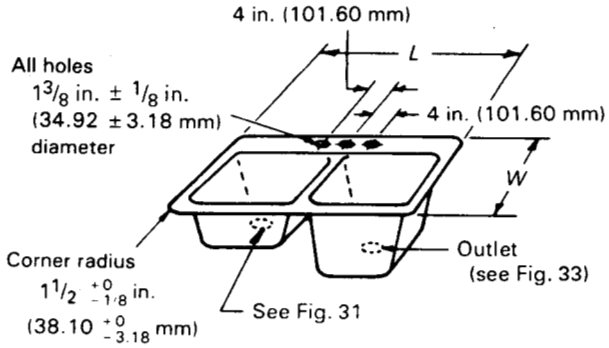


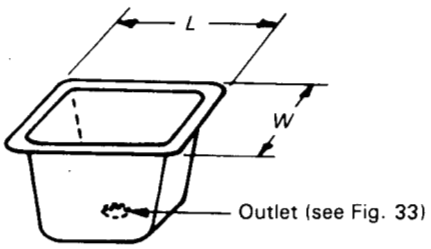
Sizes, in. (mm)	
L	*W*
42 (1066.80)	20 (508.00)

FIG. 37 FLAT-RIM SINK AND LAUNDRY TRAY COMBINATIONS, REVERSIBLE (Ref. para. 5.6.2)



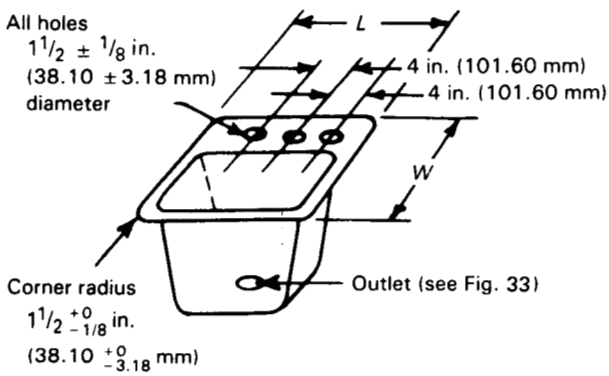
Sizes, in. (mm)	
L	*W*
42 (1066.80)	21 (533.40)

FIG. 38 FLAT-RIM SINK AND LAUNDRY TRAY COMBINATIONS WITH LEDGE, SINK AT RIGHT OR LEFT (Ref. para. 5.6.3)



Sizes, in. (mm)	
L	*W*
24 (609.60)	20 (508.00)

FIG. 39 FLAT-RIM LAUNDRY TRAYS, SINGLE COMPARTMENT (Ref. para. 5.7.1)



Sizes, in. (mm)	
L	*W*
24 (609.60)	21 (533.40)
24 (609.60)	23 (584.20)

FIG. 40 FLAT-RIM LAUNDRY TRAYS, SINGLE COMPARTMENT WITH LEDGE (Ref. para. 5.7.2)

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(b) Restore the gloss to the ground enamel surface by refiring just sufficiently to obtain a fire polish. The polished surface shall permit ready cleaning, with a dry cloth, of marks made by a colored wax pencil.

(c) Check for acid resistance by applying the tests in ASTM C 282.

(d) The entire oblique section shall be rubbed with a colored wax pencil, and the deposit of colored wax rubbed with a dry cloth. If the wax cannot be readily and evenly removed from all portions of the treated area of enamel by rubbing, thus indicating that the enamel has been roughened by the test solution, the enamel shall not be considered acid resisting throughout.

7.3 Specular Gloss

The specular gloss shall be determined in accordance with ASTM C 346. Variations commercially acceptable are not cause for rejection.

7.4 Reflectance

White enameled cast iron fixtures shall be tested in accordance with ASTM E 1347. Variations commercially acceptable are not cause for rejection.

7.5 Lavatory Overflow Test

The lavatory shall be installed in a stand with a standard mechanical waste fitting. The waste outlet shall be closed and the rate of water supply adjusted to 3.0 gal/sec (0.19 L/s). The elapsed time, from the onset of water flowing into the overflow opening until the water begins to overflow the flood level, shall be measured and shall not be less than 5 minutes.

7.6 Test for Flange-Fixture Seal (Laboratory Tests for Field Installation Units Only)

7.6.1 Preparation. The unit shall be installed in accordance with manufacturer's installation instructions.

7.6.2 Test Method. The flange seal at the joint with the fixture shall be exposed to a continuous water spray for 15 minutes using a shower spray with a flow rate of 3.0 gpm at 80 psi and a water temperature of 100°F ± 5°F (37.78°C ± 1.67°C).

7.6.3 Performance Requirement. Water transmission through the test sample joint to the back of the flange shall be cause for rejection.

8 MARKING

8.1 Marking

Each unit shall be permanently marked with the name or trademark of the manufacturer, or, in the case of private brand sales, of the customer for whom the unit was originally manufactured. Marking shall be applied to the underside of sinks and lavatories in such a manner that the identification can be viewed when the cabinet door is opened. On bathtubs, markings shall be placed in such a position that they can be readily seen after installation.

8.2 Label

The packaging or product shall be marked "ASME A112.19.1M."

8.3 Optional Marking

Marking according to the Definitive Part Numbering System in Appendix A is optional but may assist product distribution to federal procurement agencies.

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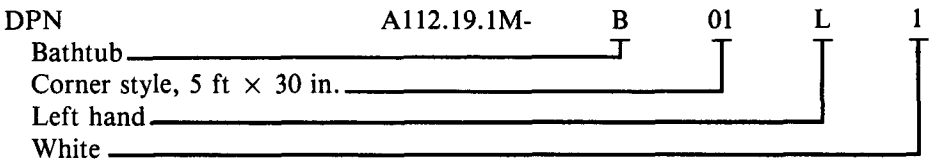
APPENDIX A

A DEFINITIVE PART NUMBERING SYSTEM FOR ASME A112.19.1M ENAMELED CAST IRON PLUMBING FIXTURES

(This Appendix is not part of ASME A112.19.1M-1994, and is included for information purposes only.)

The following part numbering system is optional but may assist the federal procurement agencies and other specifiers in product identification.

A1 EXAMPLE OF DEFINITIVE PART NUMBER



A2 BATHTUBS

(a) The first character denotes bathtub.

B — bathtub (as specified in Figs. 2, 3, and 4)

(b) The second and third characters denote style and size.

01 — corner, 5 ft length × 30 in. width × 16 in. height
02 — corner, 5 ft length × 32 in. width × 16 in. height
03 — recess, 4½ ft length × 30 in. width × 16 in. height
04 — recess, 4½ ft length × 32 in. width × 16 in. height
05 — recess, 5 ft length × 30 in. width × 16 in. height
06 — recess, 5 ft length × 32 in. width × 16 in. height
07 — recess, 5½ ft length × 30 in. width × 16 in. height
08 — recess, 5½ ft length × 32 in. width × 16 in. height
09 — recess, 4½ ft length × 30 in. width × 14 in. height
10 — recess, 5 ft length × 30 in. width × 14 in. height

(c) The fourth character denotes left or right hand.

L — left hand
R — right hand

(d) The fifth character denotes color.

1 — white
2 — color as specified in order

A3 LAVATORIES

(a) The first character denotes lavatory.

L — lavatory (as specified in Figs. 9 through 12, 14, 16, and 17)

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(b) The second and third characters denote style and size (length × width or diameter).

01 — straight-front apron with straight back, 19 in. × 17 in.
02 — straight-front apron with straight back, 20 in. or 21 in. × 18 in.
03 — straight-front apron with straight back, 22 in. × 19 in.
04 — shelf-back with apron, 19 in. × 17 in.
05 — shelf-back with apron, 22 in. × 19 in.
06 — shelf-back with apron, 24 in. × 18 in.
07 — rectangular flat-rim, 20 in. × 18 in.
08 — round flat-rim, 18 in.
09 — round flat-rim, 19 in.
10 — rectangular self-rimming, 21 in. × 19 in.
11 — round self-rimming, 19 in.
12 — oval flat-rim, 19¼ in. × 16¼ in.
13 — oval self-rimming, 19¼ in. × 16¼ in.
14 — oval self-rimming, 20¼ in. × 17¼ in.
15 — pedestal mounted, 21¾ in. × 17 in.

(*c*) The fourth character denotes center distance.

A — 4 in. centers
B — 8 in. centers

(*d*) The fifth character denotes color.

1 — white
2 — color as specified in order

A4 SINKS

(a) The first character denotes sink.

S — sink (as specified in Figs. 20 through 26, 28 through 30, 32, 34, and 36 through 40)

(b) The second and third characters denote style and size (length × width).

01 — flat-rim ledge kitchen sink, 24 in. × 21 in.
02 — flat-rim ledge kitchen sink, 30 in. × 21 in.
03 — flat-rim ledge kitchen sink, double compartment, 32 in. × 20 in. or 21 in.
04 — flat-rim ledge kitchen sink, double compartment, 42 in. × 21 in.
05 — flat-rim kitchen sink with center outlet, 24 in. × 16 in.
06 — flat-rim kitchen sink with center outlet, 24 in. × 18 in.
07 — flat-rim kitchen sink with center outlet, 30 in. × 18 in.
08 — flat-rim kitchen sink with center outlet, 24 in. × 20 in.
09 — flat-rim kitchen sink with center outlet, 30 in. × 20 in.
10 — flat-rim double compartment kitchen sink, 32 in. × 20 in.
11 — wall-hanging wash sink with back, with pedestal, 4 ft × 18 in.
12 — wall-hanging wash sink with back, without pedestal, 4 ft × 18 in.
13 — wall-hanging wash sink with back, with pedestal, 5 ft × 18 in.
14 — wall-hanging wash sink with back, without pedestal, 5 ft × 18 in.
15 — wall-hanging wash sink with back, with pedestal, 6 ft × 18 in.
16 — wall-hanging wash sink with back, without pedestal, 6 ft × 18 in.
17 — self-rimming double compartment kitchen sink, 32 in. or 33 in. × 22 in.
18 — self-rimming triple compartment kitchen sink, 42 in. to 44 in. × 22 in.
19 — self-rimming corner kitchen sink, 38 in. × 22 in.
20 — self-rimming kitchen sink with center outlet, 24 in. × 21 in.
21 — self-rimming kitchen sink with center outlet, 25 in. × 22 in.
22 — tile-edge kitchen sink, 24 in. to 30 in. × 21 in.
23 — tile-edge double compartment kitchen sink, 32 in. × 21 in.
24 — tile-edge triple compartment kitchen sink, 40 in. to 44 in. × 21 in.
25 — roll-rim service sink with back, on trap standard, 22 in. × 18 in.
26 — roll-rim service sink with back, on trap standard, 24 in. × 20 in.
27 — ledge sink and laundry tray combination with back, sink at left, 42 in. × 24 in. or 25 in.
28 — ledge sink and laundry tray combination with back, sink at right, 42 in. × 24 in. or 25 in.
29 — flat-rim sink and laundry tray combination, reversible, 42 in. × 20 in.

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30 — flat-rim sink and laundry tray combination with ledge, sink on right, 42 in. × 21 in.
31 — flat-rim sink and laundry tray combination with ledge, sink on left, 42 in. × 21 in.
32 — flat-rim laundry tray, single compartment, 24 in. × 20 in.
33 — flat-rim laundry tray, single compartment with ledge, 24 in. × 21 in.
34 — flat-rim laundry tray, single compartment with ledge, 24 in. × 23 in.

(c) The fourth character denotes faucet hole requirement.

A — three holes, two holes, or no holes
B — fourth spray hole required [only applicable to flat-rim ledge kitchen sinks (single or double compartment) and self-rimming kitchen sinks (single or double compartment)]

(d) The fifth character denotes color.

1 — white
2 — color as specified in order

The definitive part number is formed by combining the ASME Standard designation (A112.19.1M) with a dash after it; the fixture letter; the style and size code number; (1) left- or right-hand letter for bathtubs, (2) center distance letter for lavatories, or (3) hole configuration letter for sinks; and color number.

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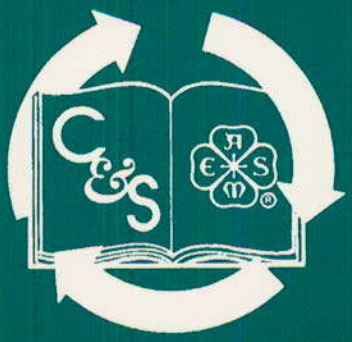

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