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ASME A112.36.2M-1991

(REVISION OF ANSI A112.36.2M-1983)

Cleanouts

AN AMERICAN NATIONAL STANDARD



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AN AMERICAN NATIONAL STANDARD

Cleanouts

ASME A112.36.2M-1991

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The American Society of
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FOREWORD

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The common cleanout is one of the most important, yet frequently neglected, items in the plumbing system. The cleanout provides access to horizontal and vertical lines and stacks to facilitate inspection and the removal of obstructions.

Early in the development of plumbing systems the need for cleanouts was realized. This need was met by placing a tee or similar fitting in the line with a loosely set cover over the branch opening. Escaping sewer gas and admission of surface water into the sewer proved this arrangement unsatisfactory and led to the development of the cleanout with bolted gasketed cover and to the present day common cleanout, which normally consists of an iron body or ferrule with a tapered brass plug. The inadequacy of such devices is evident upon examination. They comply only with the very minimum requirements. Existing standards are not sufficiently specific regarding weight, strength, finish, and location or installation of cleanouts. Some results are plugs which cannot be removed or break upon removal, inadequate tool openings, and hazardous protruding heads in work areas.

Cleanouts in general should be gas and watertight; provide quick and easy plug removal; allow ample space for rodding tools; have means of adjustment to finish floor level; be attractive in appearance; and be designed to support whatever traffic is directed over them.

The benefits of basic design standards were apparent to cleanout manufacturers and a study was initiated as an industry effort in 1961. Prior to the completion of this work, the American National Standards Committee A112, Standardization of Plumbing Materials and Equipment, was organized and Panel No. 36 of this committee was assigned the responsibility to develop standards for cleanouts. The first meeting was held on September 12, 1967. A rough draft of this Standard was submitted March 20, 1968 to the Task Force members. Revisions were made and the proposed Standard was submitted to members of Panel No. 36 for their approval.

Following approval of the proposal by the Panel, the American National Standards Committee A112, and the A112 Secretariat, this draft was adopted as an American National Standard by the American National Standards Institute on February 11, 1975.

This Standard was reviewed in 1989 resulting in minor changes, additions, and clarifications. The revised document was approved by Panel 36, the A112 Standards Committee, and the Secretariat. Subsequently this modified version was adopted by the American National Standards Institute on August 16, 1991.

Suggestions for improvement of this Standard are welcomed. They should be sent to the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, N.Y. 10017.

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CONTENTS

Foreword iii
Standards Committee Roster v

1 Scope and Purpose 1
2 Definitions 1
3 Nomenclature 1
4 Connection and Closure Types 1
5 Frame and Cover Types 3
6 Top Loading — Classification 4
7 Materials and Finishes 4
8 Variations and Accessories 5

Tables

1 Minimum Dimensions for Threaded Outlet Connections 2
2 Minimum Dimensions for Inside Caulk Outlet Connections 2
3 Minimum Plug Size Requirements, Specific Pipe Sizes 3

Figures

1 Cleanout With Adjustable Housing and Spigot Connection 1
2 Cleanout With Threaded Adjustable Housing and Inside Caulk Connection 2
3 Cleanout With Heavy Duty Adjustable Housing and Spigot Connection 2
4 Cleanout Tee With Access Cover 3
5 Straight Thread Gasket Closure 3
6 Tapered Thread Closure 3
7 Cover Variations — Wide Flange 6
8 Cover Variations — Clamping Device 6

Appendix

A SI (Metric) Conversion Table 7

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CLEANOUTS

1 SCOPE AND PURPOSE

1.1 Scope

This Standard covers cleanouts including floor and wall types used in concealed piping in and adjacent to commercial, industrial, institutional, and other buildings open to public use.

1.1.1 This Standard addresses:

(a) definitions;
(b) nomenclature;
(c) connection and closure types;
(d) covers and frames;
(e) materials and finishes;
(f) variations and accessories.

1.2 Purpose

The purpose of this Standard is to establish the basic requirements of cleanouts for the guidance of manufacturers, distributors, and purchasers so that these products may be made available in both quality and design adequate to serve the purpose intended. It is not intended for use as a specification guide.

CAUTION: Figures used in this Standard are intended only to describe and portray typical floor and wall type cleanouts and are not intended to restrict design or to be used for specification purposes.

2 DEFINITIONS

accessible — accessible shall mean having access to the floor or wall cleanout but which first may require the removal of an access panel, door, or similar obstruction

floor cleanout — a plumbing fitting designed to provide access through the floor or slab to drainage piping, for the purpose of cleaning or inspection

wall cleanout — a plumbing fitting designed to provide access through the wall to drainage piping for the purpose of cleaning or inspection

3 NOMENCLATURE

Figures 1 through 4 relate nomenclature to the physical locations on the cleanout.

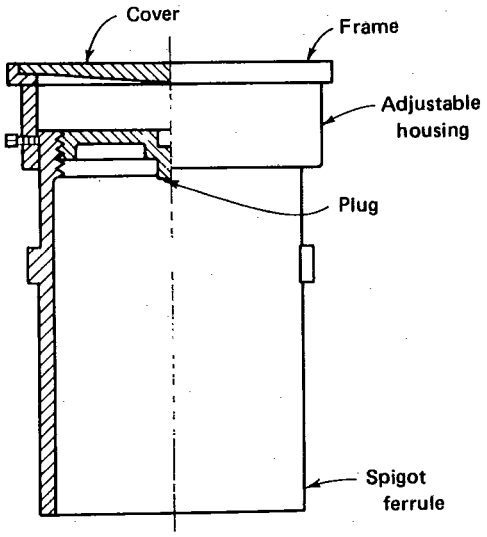


FIG. 1 CLEANOUT WITH ADJUSTABLE HOUSING AND SPIGOT CONNECTION

4 CONNECTION AND CLOSURE TYPES

4.1 Outlet Connections

4.1.1 Threaded. All threaded outlet connections shall be American Standard Taper Pipe Threads for general use (NPT) and shall conform to the minimum dimensions shown in Table 1.

4.1.2 Inside Caulk. All inside caulk outlet connections for connection to plain or spigot end of soil pipe by means of caulked lead joint or gasket shall conform to the minimum dimensions shown in Table 2.

4.1.3 Spigot. All spigot outlet connections shall conform to the spigot end dimensions shown in American National Standard for Cast Iron Soil Pipe and Fittings, ANSI A112.5.1, and Cast Iron Soil Pipe Institute Standard No. 301, Cast Iron Soil Pipe and Fittings for Hubless Cast Iron Sanitary System.

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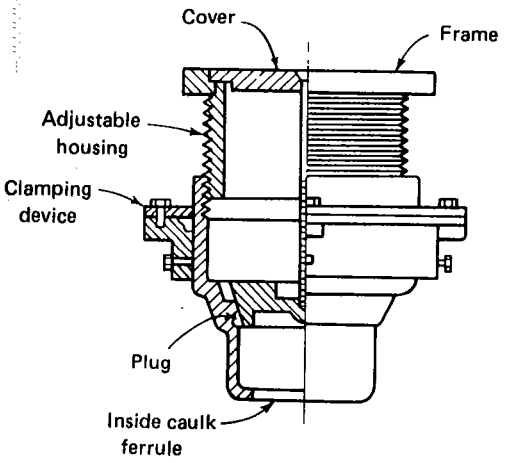


FIG. 2 CLEANOUT WITH THREADED ADJUSTABLE HOUSING AND INSIDE CAULK CONNECTION

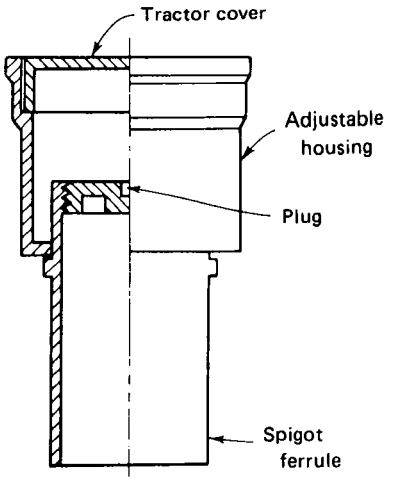


FIG. 3 CLEANOUT WITH HEAVY DUTY ADJUSTABLE HOUSING AND SPIGOT CONNECTION

TABLE 1 MINIMUM DIMENSIONS FOR THREADED OUTLET CONNECTIONS

Nominal Pipe Size, in.	A NPT in.	B in.	B mm	D in.	D mm
1½	1½	2 5/16	59	7/16	11
2	2	2 7/8	73	7/16	11
2½	2½	3 3/8	86	5/8	16
3	3	4 1/8	105	3/4	19
4	4	5 1/8	130	13/16	21
5	5	6 1/4	159	7/8	22
6	6	7 1/4	184	1	25

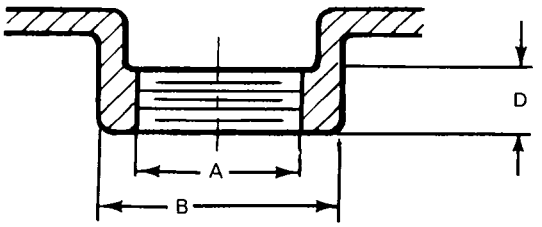
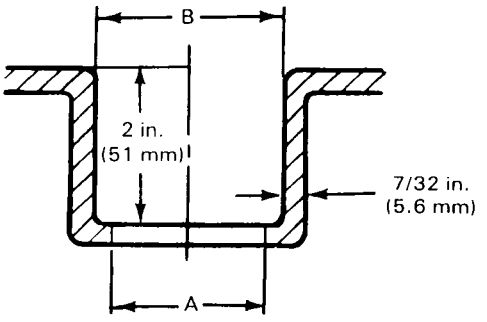


TABLE 2 MINIMUM DIMENSIONS FOR INSIDE CAULK OUTLET CONNECTIONS

Nominal Pipe Size, in.	A in.	A mm	B in.	B mm
2	2½	64	3	76
3	3 5/8	92	4 1/8	105
4	4 5/8	117	5 1/8	130
5	5 5/8	143	6 1/8	156
6	6 5/8	168	7 1/8	181



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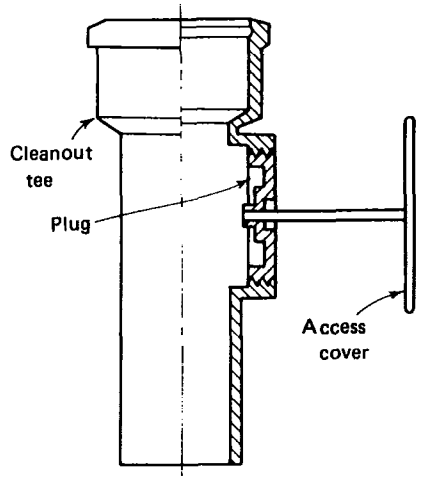


FIG. 4 CLEANOUT TEE WITH ACCESS COVER

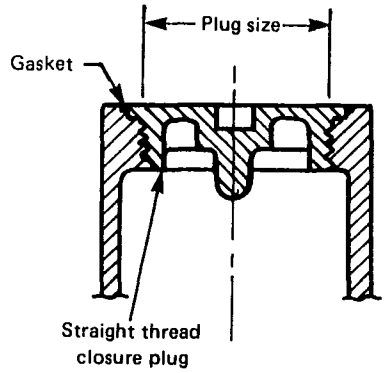


FIG. 5 STRAIGHT THREAD GASKET CLOSURE

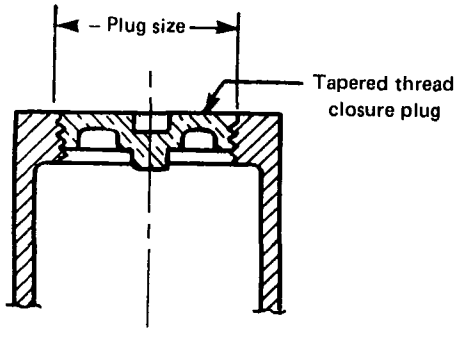


FIG. 6 TAPERED THREAD CLOSURE

TABLE 3
MINIMUM PLUG SIZE REQUIREMENTS, SPECIFIC PIPE SIZES

Nominal Pipe Size, in.	Nominal Plug Size, in.		
	Inside Caulk	Spigot	Threaded
2	2	1½	1½
3	3	2½	2½
4	4	3½	3½
5	5	4	4
6	6	5	5
Nominal Pipe Size, mm	**Nominal Plug Size, mm**		
	Inside Caulk	Spigot	Threaded
51	51	38	38
76	76	64	64
102	102	89	89
127	127	102	102
152	152	127	127

4.1.4 Tolerances. All dimensions given in Tables 1 and 2 and the associated figures are subject to standard commercial tolerances of ±1/16 in.(±1.6 mm).

4.2 Closure Types

See Table 3 for minimum size requirements.

4.2.1 Straight Thread Gasket Closure. Figure 5 shows tapered shoulder gasket seal type plug with NPSL threads, either raised or countersunk, with provision for cover either raised or countersunk, with provision for cover securing screw, where required. The gasket is to be lead or elastomer material in order to provide a gas tight seal.

4.2.2 Tapered Thread Closure. Figure 6 shows a plug with NPT threads. It may be either raised head or countersunk with provision for cover securing screw, where required. The seal is formed by makeup of threads.

5 FRAME AND COVER TYPES

5.1 Integral With Housing (See Figs. 1 and 2.)

5.1.1 Scoriated. Round or square marked with grooves in checkered pattern to provide slip resistant surface.

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5.1.2 Plain. Round or square polished surface.

5.1.3 Tile. Cover recessed for installation of composition tile.

5.1.4 Terrazzo. Cover recessed for installation of poured terrazzo.

5.1.5 Secured. Cover fastened to frame with slotted or vandal-proof screws.

5.2 Separate Access

5.2.1 Terms defined in 5.1.1 through 5.1.5 shall also apply to separate access type.

5.2.2 Access Door. Square or rectangular frame with hinged door, with cam or key activated cylinder lock and anchoring device.

5.2.3 Access Cover. Round or square cover only, less frame with center screw for securing to cleanout plug.

6 TOP LOADING — CLASSIFICATION

6.1 Loading Classifications

Covers and top rims are to be designed to meet the following loading classifications.

6.1.1 Light Duty. All covers having safe live load (as calculated in6.2.5under 2000 lb (900 kg).

6.1.2 Medium Duty. All covers having safe (900 kg) and 4999 lb (2250 kg).

6.1.3 Heavy Duty. All covers having safe live load (as calculated in 6.2.5) between 5000 lb (2250 kg) and 7400 lb (3375 kg)

6.1.4 Extra Heavy Duty. All covers having safe live load (as calculated in 6.2.5) between 7500 lb (3375 kg) and 10,000 lb (4500 kg).

6.1.5 Special Duty. Covers having safe live load (as calculated in 6.2.5) over 10,000 lb (4500 kg) should be considered special and treated accordingly.

6.2 Test Procedures for Cover Loading

Requirements listed in 6.1.1, 6.1.2, 6.1.3, and 6.1.4 shall be determined as follows.

6.2.1 Load classifications as stated in 6.1 are to be determined by laboratory tests.

6.2.2 Platen Size. A 3.5 in. (89 mm) diameter platen shall be applied to the center of the cover specimen.

6.2.3 Loading is to be applied slowly so that point of failure can be observed.

6.2.4 Point of Failure

(*a*) *Brittle Materials* (*Cast Iron*). The load in lb (kg) at which the first fracture on any part of the specimen appears.

(*b*) *Ductile Material.* The load which the permanent set (at the point of loading) is greater than 2% of the longest transverse dimension of the specimen.

6.2.5 Safe Live Load. The maximum safe live load is computed by dividing the load at failure by two.

7 MATERIALS AND FINISHES

7.1 Materials

The items covered in this Standard shall be of materials suitable for production, installation and service intended which meet all applicable requirements and standards given herein. It is not the intent of this Standard to limit acceptable materials to those included in this Section. The use of other materials of comparable performance is permissible.

All castings shall be sound, free of blow holes (holes in casting due to air or gas in the metal or mold), cold shuts (casting defects formed when two streams of metal become so cold they do not fuse upon meeting, i.e., incomplete casting), and other imperfections adversely affecting casting quality, and shall be of uniform wall thickness and true to pattern. They shall also be clean and free of fins (projections on castings due to imperfect joints).

References to ASTM and ANSI Standards shall be the latest edition.

7.1.1 Cast Iron. Castings shall conform to ASTM Specification for Grey Iron Castings A 48 Class 25.

7.1.2 Copper Alloy. Castings shall conform to ASTM B584 and may be of Copper Alloy Nos. C83600, C83800, C83300, C97300, or C97600.

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7.1.3 Bolting Materials, Steel. The materials for studs, nuts, cap screws, and other steel fasteners shall at least equal the requirements of ASTM Specification A 307 Carbon steel externally threaded fasteners, Grade A, and A 563 carbon and alloy steel nuts, Grade A. Threads shall be Class 2A and fasteners shall be plated.

7.2 Finishes

In all cases where parts are to be coated or plated, they shall be pickled as required and cleaned to provide suitable surface for proper bonding of the finish.

7.2.1 Paint Coatings. Cast iron castings shall be cleaned and coated with a suitable paint, lacquer, or synthetic coating of quality to provide protection against rusting of ferrous surfaces during normal handling and warehousing prior to installation.

7.2.2 Cadmium Plate. After preplating cleaning, parts shall be given a Commercial Grade Cadmium Plate.

7.2.3 Chrome Plate, Decorative. Parts shall be polished prior to plating and then given a Commercial Grade Chromium Plate.

7.2.4 Bronze Chromate. Parts shall first be given a Commercial Grade Cadmium Plate and then a Commercial Grade Bronze Chromate treatment.

7.2.5 Zinc Plate. After preplating cleaning, parts shall be given a Commercial Grade Zinc Plate.

8 VARIATIONS AND ACCESSORIES

8.1 Wide Flange

This type is intended for use with poured or troweled synthetic floors in order to provide sufficient bonding surface between cleanout and flooring material to make a watertight seal. The minimum width of the flange is 2 1/2 in. (63.5 mm) See Fig. 7.

8.2 Clamping Device

This device is intended for floors where waterproof membrane, metallic, or composition flashing shall be required. See Fig. 8.

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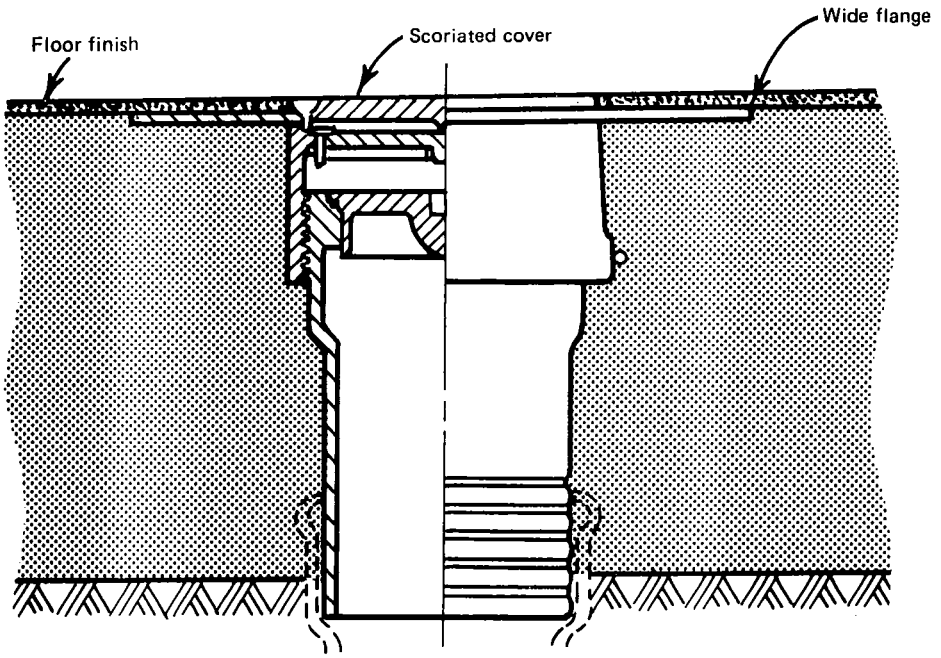


FIG. 7 COVER VARIATIONS -WIDE FLANGE

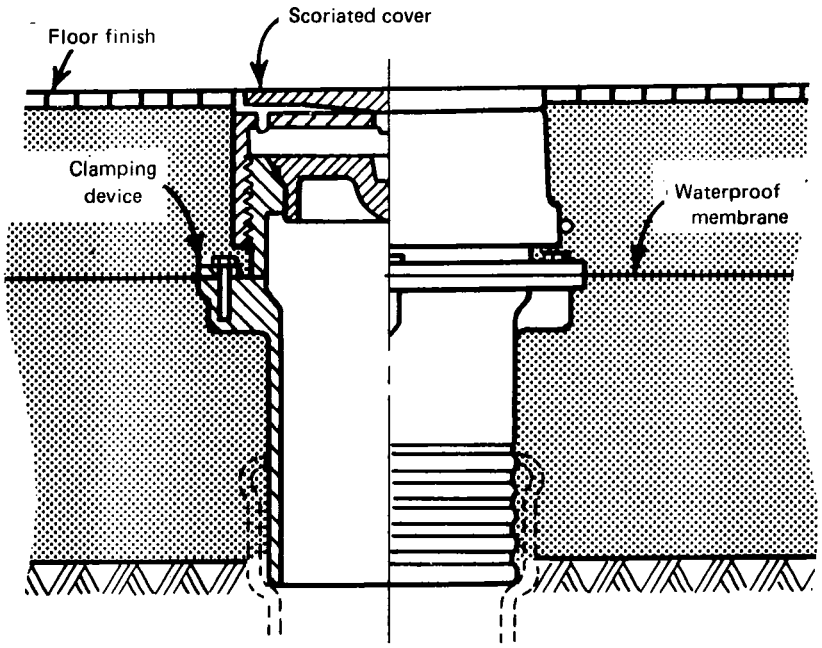


FIG. 8 COVER VARIATIONS - CLAMPING DEVICE

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APPENDIX A

SI (METRIC) CONVERSION TABLE

1 inch = 25.4 mm
1 pound = 0.4536O kg

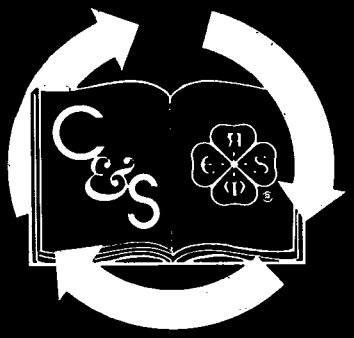
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