ASME A112.14.6-2010
(Revision of ASME A112.14.6-2006)

REAFFIRMED 2024

FOG (Fats, Oils, and Greases) Disposal Systems

AN AMERICAN NATIONAL STANDARD



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ASME
SETTING THE STANDARD

Three Park Avenue • New York, NY • 10016 USA

Date of Issuance: August 20, 2010

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New York, NY 10016-5990

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TABLE OF CONTENTS

Foreword iv
ASME A112 Committee v
Correspondence With the A112 Committee vi

1 General 1
2 General Requirements 2
3 Special Requirements 2
4 Testing 3
5 Marking 4

FOREWORD

The American Society of Mechanical Engineers has prepared this Standard for establishing specifications regarding the construction and application of FOG (fats, oils, and greases) disposal systems. It also is intended to serve as a guide for producers, distributors, architects, engineers, contractors, installers, inspectors, and users; to promote understanding regarding designs, materials, applications, and installation; and to provide guidelines for identifying FOG disposal systems that conform to this Standard.

In 1994, the Plumbing and Drainage Institute (PDI) agreed to work with The American Society of Mechanical Engineers for the development of a Grease Interceptor Standard. That Standard is known as ASME A112.14.3, and it serves as a derivative of that collaboration. PDI has a membership of organizations that manufactures products for the plumbing industry. The basic aim of PDI is to contribute its combined talents and resources to the advancement of plumbing engineering and the plumbing industry. This Standard was developed with the assistance of PDI.

For more than a century, grease interceptors have been used in plumbing wastewater systems to permit the free flow of drainage from sinks and similar equipment and to prevent grease accumulations from clogging connecting piping and sewer lines. In 1883, Nathaniel T. Whiting of California applied for a patent on a grease interceptor, which was issued in October 1884.

Whiting's design principle does not differ greatly from present-day grease interceptors.

For the next 50 years, there was no coordinated effort to standardize ratings or to establish performance requirements for grease interceptors. Ratings were determined by each manufacturer for its interceptors, which were produced in a variety of sizes and types in an effort to meet engineers' specifications and satisfy code requirements.

In late 1940 and early 1941, prior to U.S. entry into World War II, grease interceptors were specified for army posts to meet specifications of the Construction Division, Office of the Quartermaster General. These specifications called for interceptors, which proved inadequate; it immediately became apparent that a comprehensive engineering and testing program was needed to rate grease interceptors properly. Apart from prevention of sewage systems clogging, properly rated and sized grease interceptors were essential to the recovery of oils and grease so badly needed for the war effort. As a result, a series of conferences involving the Research Committee of the Plumbing and Drainage Manufacturer's Association (now the Plumbing and Drainage Institute), representatives of the Quartermaster General, Surgeon General, Army Corps of Engineers, and others was held to develop a testing program to establish flow rates and grease holding capacity for uniform rating of grease interceptors manufactured at that time.

The program that emerged from these conferences included exhaustive laboratory testing of each grease interceptor at the Iowa Institute of Hydraulic Research at Iowa State University. This phase of the program was covered in a comprehensive report issued in August 1945. Using the guidelines established in Iowa, the Research Committee continued the testing program at the United States Testing Company, Inc., which culminated in the publication of Standard PDI-G101 in 1949 and the rating of applicable grease interceptors.

Since its initial publication, Standard PDI-G101 has been widely accepted and is referenced in most plumbing codes. It has been reprinted in its original format many times and serves as the definitive standard for determining separation and retention efficiency of grease interceptors.

Restrictions and regulations regarding proper disposal of retained FOG promulgated subsequent to PDI-G101 and ASME A112.14.3 resulted in the development of various devices that not only separate and retain FOG, but internally dispose of retained FOG by means of mass and volume reduction by processes including, but not limited to, thermal, chemical, electrical, and biological. It is devices having this disposal characteristic to which this Standard applies. Due to the differences between this technology and those described in PDI-G101 and ASME A112.14.3, such as internal disposal, the ASME A112 Standards Committee suggested the development of this Standard. This Standard applies to grease interceptors using the hydromechanical principles of PDI-G101, ASME A112.14.3, or the gravity interceptor principles of IAPMO/ANSI Z 1001.

This revision was approved as an American National Standard on June 14, 2010.

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Standardization of Plumbing Materials and Equipment

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Secretary, A112 Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990
(http://go.asme.org/Inquiry)

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the edition, the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation. When appropriate, proposals should be submitted using the A112 Project Initiation Request Form.

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Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the standard, the paragraph, figure or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the standard to which the proposed Case applies.

Interpretations. Upon request, the A112 Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the A112 Standards Committee.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his/her request in the following format:

Subject: Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition: Cite the applicable edition of the Standard for which the interpretation is being requested.
Question: Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format will be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not “approve,” “certify,” “rate,” or “endorse” any item, construction, proprietary device, or activity.

Attending Committee Meetings. The A112 Standards Committee schedules meetings as needed, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the A112 Standards Committee. The A112 home page contains information on future meeting dates and locations.

1 GENERAL

1.1 Scope

This Standard establishes requirements for FOG (fats, oils, and greases) disposal systems. FOG disposal systems shall be designed to

(a) remove FOG from effluent

(b) retain separated FOG

(c) internally dispose retained FOG by means and methods of mass and volume reduction as required by para. 4.3.2

The use of alternate materials or methods are permitted, provided the proposed material and method complies with the performance requirements and intent of this Standard.

1.2 Units of Measurement

Where values are stated in U.S. Customary units and the International System of Units (SI), the U.S. Customary units shall be considered as the standard.

In this Standard, gallons (U.S. liquid) per minute is abbreviated "gpm" and liters (metric liquid) per minute is abbreviated "L/min".

1.3 References

The following is a list of publications referenced in this Standard:

AASHTO H20-44, Standard Specifications for HS-20, Highway Loading

Publisher: American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Washington, DC 20001 (http://www.transportation.org)

ACI 318, Specification for Steel Reinforcement

Publisher: American Concrete Institute (ACI), 38800 Country Club Drive, Farmington Hills, MI 48331 (http://www.aci-int.org)

ASME A112.3.1, Stainless Steel Drainage Systems for Sanitary, Storm, and Chemical Applications, Above and In-Ground
ASME A112.14.3, Grease Interceptors
ASME B1.20.1, Pipe Threads, General Purpose (Inch)

Publisher: The American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900 (http://www.asme.org)

ASTM A 888, Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
ASTM C 33-03, Standard Specification for Concrete
ASTM C 94, Standard Specification for Ready-Mixed Concrete
ASTM C 150-04, Standard Specification for Portland Cement
ASTM C 260-01, Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C 618-03, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

Publisher: American Society for Testing and Materials (ASTM International), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 (http://www.astm.org)

IAPMO/ANSI Z 1001, Grease Interceptors

Publisher: International Association of Plumbing and Mechanical Officials (IAPMO), 5001 East Philadelphia Street, NW, Ontario, CA 91761 (http://www.iapmo.org)

PDI-G101, Testing and Rating Procedure for Grease Interceptors With Appendix of Sizing and Installation Data

Publisher: Plumbing and Drainage Institute (PDI), 800 Turnpike Street, North Andover, MA 01845 (http://www.pdionline.org)

UL 499, Electrical Standard for Heated Appliances
UL 917, Standard for Clock-Operated Switches
UL 1004, Standard for Electric Motors
UL 1585, Standard for Class 2 and Class 3 Transformers

Publisher: Underwriters Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062-2096 (http://www.ul.com)

USEPA Method 1664 (A), FOG (Fats, Oils & Greases) Measurement