ASME A112.14.3-2018
[Revision of ASME A112.14.3-2000 (R2014)]

Hydromechanical Grease Interceptors

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

ASME A112.14.3-2018
[Revision of ASME A112.14.3-2000 (R2014)]

Hydromechanical Grease Interceptors

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: May 18, 2018

This Standard will be revised when the Society approves the issuance of a new edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the Committee web page and under http://go.asme.org/InterpsDatabase. Periodically certain actions of the ASME A112 Committee may be published as Cases. Cases are published on the ASME website under the A112 Committee Page at http://go.asme.org/A112committee as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The A112 Committee Page can be found at http://go.asme.org/A112committee. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting “Errata” in the “Publication Information” section.

The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

CONTENTS

FOREWORD

In 1994, the Plumbing and Drainage Institute (PDI) agreed to work with the American Society of Mechanical Engineers for the development of this Standard. This Standard includes criteria for testing and rating of grease interceptors; general requirements for these appurtenances; and an appendix of valuable sizing, installation, and maintenance data.

PDI has a membership of organizations that manufacture 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 free flow of drainage from sinks and similar equipment and to prevent grease accumulations from clogging connecting piping and sewer lines. In 1883, one Nathaniel T. Whiting of California applied for a patent on a grease trap, 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 the United States' 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 properly rate grease interceptors. 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 PDI), representatives of the Quartermaster General, Surgeon General, Army Corps of Engineers, and others were 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 HydrauIic 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.

PDI currently maintains a grease interceptor testing, rating, and certification facility. This revision includes the following changes to the 2018 edition of the standard:

(a) adds sizes above 100 gpm

(b) include a new drawing to show additions for testing 75 and 100 gpm sizes and larger

(c) eliminate efficiency "B"

(d) add definition for hydromechanical grease interceptor

(e) add additional sizing, see Table 3 based on maximum flow for pipe capacity

The Committee recognizes that a number of sewerage treatment communities and other jurisdictions have established various maximum limits of fats, oils, and greases (FOG) in the waste stream. The most common of these is 100 mg/L or 100 gpm. The Committee decided that until a specific maximum limit is universally accepted, no number should be included in the Standard.

ASME A112.14.3 was approved as an American National Standard on January 10, 2018.

ASME A112 COMMITTEE
Standardization of Plumbing Materials and Equipment

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

STANDARDS COMMITTEE OFFICERS

W. M. Smith, *Chair*
S. Rawalpindiwala, *Vice Chair*
A. L. Guzman Rodriguez, *Secretary*

STANDARDS COMMITTEE PERSONNEL

R. K. Adler, City of San Jose
J. A. Ballanco, JB Engineering and Code Consulting
J. E. Bertrand, Moen, Inc.
A. Bonlender, Bradley Corp.
R. Burnham, Zurn Industries, LLC
M. Campos, ICC Evaluation Service, LLC
W. E. Chapin, Professional Code Consulting, LLC
P. V. DeMarco, IAPMO Group
N. E. Dickey, CSA Group
G. S. Duren, Code Compliance, Inc.
R. Emmerson, Consultant
R. L. George, Plumb-Tech Design and Consulting Services, LLC
A. L. Guzman Rodriguez, The American Society of Mechanical Engineers
G. W. Harrison, Consultant
L. Himmelblau, Chicago Faucet
J. M. Koeller, Koeller and Co.
C. J. Lagan, American Standard
J. W. Lauer, Sloan Valve Co.
W. LeVan, Cast Iron Soil Pipe Institute
D. Marbry, Fluidmaster, Inc.
R. Mata, CSA Group
L. A. Mercer, IAPMO Group
D. Orton, NSF International
S. Rawalpindiwala, Kohler Co.
S. A. Remedios, Remedios Consultant
M. Sigler, Plumbing Manufacturers International
G. L. Simmons, Charlotte Pipe & Foundry
W. M. Smith, American Society of Plumbing Engineers
J. C. Watson, Elkay Manufacturing
M. Weiss, Plumbing & Drainage Institute
W. C. Whitehead, Whitehead Consulting Services
A. Ciechanowski, *Alternate,* NSF International
F. DiFolco, *Alternate,* CSA Group
D. Gleiberman, *Alternate,* Sloan Valve Co.
D. Liang, *Alternate,* CSA Group
M. Malatesta, *Alternate,* American Standard
C. McLeod, *Alternate,* Kohler Co.
W. B. Morris, *Alternate,* Charlotte Pipe & Foundry
D. Viola, *Alternate,* IAPMO Group
S. L. Cavanaugh, *Contributing Member,* Cavanaugh Consulting
C. L. Jahrling, *Contributing Member,* ASSE International
N. M. Kummerlen, *Contributing Member,* Consultant

A112 PROJECT TEAM 14.3 — GREASE INTERCEPTORS

D. Orton, *Chair,* NSF International
J. A. Ballanco, JB Engineering and Code Consulting
W. C. Batten, Thermaco, Inc.
A. Bird, Canplas Industries, Ltd.
R. Burnham, Zurn Industries, LLC
M. Campos, ICC Evaluation Service, LLC
N. E. Dickey, CSA Group
G. S. Duren, Code Compliance, Inc.
D. W. Gallmann, Consultant
R. L. George, Plumb-Tech Design and Consulting Services, LLC
R. Guinn, Canplas Industries, Ltd.
G. W. Harrison, Consultant
M. J. Lenger, Cleanblu, Inc.
K. Loucks, IW Consulting Service
D. Viola, IAPMO Group
M. Weiss, Plumbing & Drainage Institute
W. C. Whitehead, Whitehead Consulting Services

CORRESPONDENCE WITH THE A112 COMMITTEE

General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, A112 Standards Committee
The American Society of Mechanical Engineers
Two 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 paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Proposing a Case. Cases may be issued to provide alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard and 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 Standards 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.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at http://go.asme.org/InterpretationRequest. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of the A112 Standards Committee at the above address. The request for an 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 in one or two words.
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. Please provide a condensed and precise question, composed in such a way that a "yes" or "no" reply is acceptable.
Proposed Reply(ies):	Provide a proposed reply(ies) in the form of "Yes" or "No," with explanation as needed. If entering replies to more than one question, please number the questions and replies.
Background Information:	Provide the Committee with any background information that will assist the Committee in understanding the inquiry. 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 the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

Moreover, ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Standard requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the Inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

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 regularly holds meetings and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the A112 Standards Committee. Future Committee meeting dates and locations can be found on the Committee Page at http://go.asme.org/A112committee.

HYDROMECHANICAL GREASE INTERCEPTORS

1 GENERAL

1.1 Scope

This Standard covers general product requirements as well as the performance criteria for the testing and rating of hydromechanical grease interceptors, rated by flow in gallons per minute (gpm) or liters per minute (L/min).

1.2 Units of Measurement

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

1.3 Reference Standards

As a prerequisite for evaluation, a product that tested to the requirements of this Standard shall satisfy the requirements of the latest edition of the following standards, as applicable:

ASME A112.3.1, Stainless Steel Drainage Systems
ASME B1.20.1, Pipe Threads
Publisher: The American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016-5990 (www.asme.org)

ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A888, Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
ASTM D2665, Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
Publisher: American Society for Testing and Materials (ASTM International), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 (www.astm.org)

1.4 Definitions

breakdown grease capacity: the number of pounds or kilograms of grease a grease interceptor retains at a specific flow rate at the last increment preceding two successive increments in which either the average efficiency is less than 90% or the incremental efficiency is less than 80%.

directly connected: a grease interceptor that is designed to receive the discharge directly from fixtures without an air gap or air break and be directly or indirectly connected to the plumbing drainage system.

flow control, unvented: a device installed upstream of or within the interceptor, having an orifice that controls the rate of flow through the interceptor.

flow control, vented: a device installed upstream of the interceptor having an orifice and air intake (vent) downstream from the orifice which allows air to be drawn into the flow. The device that controls the rate of flow through the interceptor, and an air intake (vent) downstream to the interceptor.

hydromechanical grease interceptor: a plumbing appurtenance or appliance installed in a sanitary drainage system to intercept nonpetroleum fats, oils, and greases (FOG) from a wastewater discharge; rated by flow. The design incorporates, air entrainment, hydromechanical separation, interior baffling, and/or barriers in combination or separately, and one or more of the following:

(a) external flow control, with air intake (vent), directly connected

(b) external flow control, without air intake (vent), directly connected

(c) without external flow control, directly connected

(d) without external flow control, indirectly connected

indirectly connected: a grease interceptor that is designed to receive the discharge from fixtures through an air gap or air break and be directly or indirectly connected to the plumbing drainage system.

minimum grease capacity: the number of pounds or kilograms of grease a grease interceptor must retain at a specified flow rate from Table 1.

2 GENERAL REQUIREMENTS

2.1 Rating

The flow rate and grease retention capacity of each grease interceptor shall be determined by application of the parameters of this Standard. Grease interceptor size shall be expressed in gallons per minute (gpm) and/or liters per minute (L/min).

Grease interceptors shall be rated using one or more of the following methods:

Type	Figure	Installation Parameters
A	1	Units with an external flow control, with air intake (vent): directly connected
B	1	Units with an external flow control, without air intake (vent): directly connected
C	2	Units without an external flow control: directly connected
D	3	Units without an external flow control: indirectly connected