INTERCEPTOR WHISPERER

Hydromechanical GREASE INTERCEPTOR

Product Review and Recommendations

September 2017 Edition

ABSTRACT

When it comes to hydromechanical grease interceptors (HGI), there is a lot of misinformation in the marketplace regarding performance, certifications, listings, ratings, or product features and benefits. This guide reviews manufacturer's sales literature, specifications, and technical documents and compares the contents to their actual certifications to separate fact from fiction. This guide is a resource to help jurisdictions and engineers make better, more informed decisions in regulating and specifying HGIs.

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Copyright Statement

Notification

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Invitation to Manufacturers

The intent is for this guide to accurately report the findings from specifications, technical documents, and/or sales literature as to performance, certifications, listings, ratings, or product features and benefits for each series evaluated. I invite manufacturers to submit copies of their official test reports, along with the incremental test data, which will be held in strict confidence, for the purpose of corroborating or correcting the information presented in this guide. I also welcome any feedback from manufacturers who believe information contained in this guide regarding any of their devices is incorrect along with any support documentation that would support a correction.

In the Works

If you find this guide helpful, please consider purchasing the *Interceptor Whisperers Commercial Grease Interceptor Guidance Manual,* which will be available soon in the IW Store. This guide will provide everything a jurisdiction needs to know about commercial grease interceptors and how to effectively regulate them in a successful FOG management program.

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Preface

When it comes to hydromechanical grease interceptors (HGI), there is a lot of misinformation in the marketplace regarding performance, certifications, listings, ratings, or product features and benefits. Is a HGI or series tested, rated and certified to an approved standard? Does a HGI or series require a vented external flow control or has it been certified with an integral (built-in) flow control? Is the HGI or series made from durable materials or is it guaranteed to fail? What's the difference between rated grease capacity and maximum grease capacity and how do you know which one a HGI or series was certified to? Are terms like 'grease design capacity' or 'greasy sludge capacity' defined and industry recognized or are they misleading?

The purpose of this guide is to provide an independent review of the devices offered by various manufacturers. The manufacturer's specifications, technical documents and sales literature are compared with their actual certifications for each of their HGI series to separate fact from fiction. Recommendations are offered as to whether a device or series should be approved, have a limited application or should not be approved by jurisdictions or specifiers.

Products recommended for approval will be made from durable and lasting materials of construction to ensure they won't fail from corrosion. They will exceed the minimum performance requirements of nationally recognized and approved standards to ensure they operate efficiently. They will be suitable for indoor or outdoor, above or below grade installations to ensure the maximum flexibility for project location. They will have flow rates that ensure the maximum number of fixtures can be connected. Last, they will have certified grease storage capacities that operationally rival the assumed capacities of much larger, but less efficient gravity grease interceptors to ensure they are a viable alternative for both the jurisdiction and constituent restaurant owners.

This guide does not review gravity grease interceptors (GGI) because there are no performance requirements nor testing protocols with which to evaluate these devices. In the future, should such a performance test protocol be developed for GGIs, a separate guide may be offered for these types of interceptors.

This guide does not review automatic grease removal devices (GRD) because they are designed to collect and discharge grease out of the interceptor to a side mounted collection container, which are to be emptied daily or more often as required. They are not designed to retain grease beyond the minimum performance requirements of ASME A112.14.3, PDI G101 or CSA B481.5, and then, only when failing to operate as intended. A separate guide may be offered in the future if there is sufficient demand for such a review of these devices.

About the Author

Ken Loucks' has been in the plumbing industry since 1989 having worked in wholesale distribution, as a manufacturer's representative and up until recently, served as the regulatory compliance manager for Schier Products Co., a manufacturer of indoor and outdoor grease interceptors. He has extensive experience in dealing with commercial grease interceptors; how they work, the codes and standards that govern them and the stakeholders affected by them.

IW Consulting Service, LLC

In March 2017, Ken started his own consulting business to provide assistance to jurisdictions in editing, updating, or creating new FOG abatement ordinances and/or policies to help jurisdictions implement effective pretreatment requirements that protect the interests of jurisdictions but also provide competitive options that reduce the costs of compliance for constituent FSE owners. Ken also offers ongoing training for pretreatment professionals through FOG workshops.

Ken is currently a member of the ASME A112.14.3, CSA B481 and IAPMO/ANSI Z1001.1 standards committees, a member of the 2015-2017 IPC Code Committee for the 2018 International Plumbing Code and a contributing editor of the American Society of Professional Engineers *Plumbing Engineering Design Handbook*, Volume 4: Plumbing Components and Equipment, Chapter 8: Grease Interceptors.

Ken has given live presentations to thousands of people across the US and Canada on various subjects relating to commercial grease interceptors. Audiences have included pretreatment professionals, plumbing, mechanical and civil engineers, plumbing code officials and plumbing and pumping contractors.

Ken along with his wife Becca resides in Vancouver, Washington near their three children and four beloved grand-dudes. Ken enjoys golfing, boating and blogging. In fact, you may have stumbled across his blog titled, *The Interceptor Whisperer*, where he opines on all-things-grease-interceptor related. If you are interested in finding out what he's been writing about recently, you can find the blog at: http://www.interceptorwhisperer.com/iw-blog

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Definitions and Acronyms

ANSI – American National Standards Institute

ASME – American Society of Mechanical Engineers

ASME A112.14.3 (R2014) – ASMEs consensus standard, approved by ANSI, governing passive HGIs. The original standard was re-affirmed in 2014 and includes four configurations:

Type A – External flow control, with air intake (vent), directly connected.

Type B – External flow control, without air intake (vent), directly connected.

Type C – Without external flow control, directly connected.

Type D – Without external flow control, indirectly connected

The standard requires HGIs be tested to breakdown to establish the devices maximum grease capacity (MGC). MGC is established at the increment preceding two successive increments in which either the average efficiency is less than 90% or the incremental efficiency is less than 80%. For certification, an interceptor shall meet the following minimum requirements at breakdown:

(a) have an average efficiency of 90% or more;

(b) have an incremental efficiency of 80% or more; and

(c) have retained not less than two (2) pounds of grease for each GPM average flow rate as determined during the test.

CSA – Canadian Standards Association

CSA B481.1 – CSA Groups consensus standard governing passive HGIs, approved by the Standards Council of Canada. Certification requires HGIs be tested and rated in accordance with ASME A112.14.3.

FC – Flow control device. May be vented external or integral (built-in) types.

FRP – Fiberglass-reinforced polyester, a thermoset plastic glass-reinforced composite used in the construction of grease interceptors.

GPM – Gallon per minute

HDPE – High-density polyethylene, a thermoplastic used in the construction of grease interceptors.

HGI – Hydromechanical grease interceptor

LDPE – Low-density polyethylene, a thermoplastic used in the construction of grease interceptors.

PDI – Plumbing and Drainage Institute

PDI G101 – PDIs proprietary standard governing testing and rating for HGIs, current edition revised April 2015. The only approved configuration requires a vented external flow control, directly connected

Interceptors are tested and rated for efficiency and grease storage capacity. Approved interceptors will have a minimum average grease removal efficiency of 90% and will retain not less than 2-1/4 pounds of grease for each GPM of average flow rate at either the interceptors Rated Grease Capacity with a 12.5% safety factor, or at the interceptors Maximum Grease Capacity by determining the break-down-point. Ratings are distinguished as follows:

- Rated Grease Capacity: efficiency and capacity of the interceptor is computed at the 13th increment which may or may not be the units' break-down point.
- Maximum Grease Capacity: efficiency and capacity is determined at the "break-down-point" or test failure, which is the increment preceding two successive increments in which either the average efficiency is less than 90 percent or the incremental efficiency is less than 80 percent.

IW Icons and Recommendations:

Approval Recommended – means that a grease interceptor or series of interceptors is made from durable materials of construction and is certified to exceed the minimum performance requirements of PDI G101, ASME A112.14.3 or CSA B481.1. Units additionally have verified maximum grease storage capacities that operationally rival physically larger but less efficient gravity grease interceptors. Based on proper sizing methodologies these units are capable of handling all kitchen fixtures in most types of restaurants, and are suitable for indoor or outdoor, above or below grade installations.

Limited Application – means that a grease interceptor or series of interceptors is made from durable materials of construction and is certified to meet or exceed the minimum performance requirements of PDI G101, ASME A112.14.3 or CSA B481.1. The unit or series is suitable for 'point of use' applications (close proximity to the appliances or appurtenances being served), in low to medium FOG producing facilities where an external interceptor is not feasible and/or preferred.

Not Recommended – means that a grease interceptor or series of interceptors is not made from durable materials of construction or the unit or series is not certified for performance to PDI G101, ASME A112.14.3 or CSA B481.1.

Bad Information – means the information reported in specifications, technical documents, and/or sales literature is misleading regarding performance, certifications, listings, ratings, or product features and benefits.

Summary of Recommendations

Manufacturer	Series	Standard Certified to	Materials of Construction	Recommendation	
Ashland Polytraps	4800	PDI G101	HDPE		Limited Application
	APGI	none	HDPE		Not Recommended
Endura Separation Technologies (formerly Canplas Endura)	Endura	A112.14.3-A PDI G101 CSA B481.1	Thermo-plastic		Limited Application
	Endura XL	A112.14.3-A/C PDI-G101	Thermo-plastic		Approval Recommended
FOG Enforcer	FE 7 - 50	A112.14.3-A PDI G101 CSA B481.1	Thermo-plastic		Limited Application
	FE750 FE1150	A112.14.3-A PDI-G101	HDPE		Limited Application
	FE1900 FE2600 FE3900	none	HDPE		Not Recommended
Jay R. Smith	8000	PDI G101	Steel		Not Recommended
	8000GT	none	Steel		Not Recommended
	8400	75 GPM only PDI G101	Steel		Not Recommended
	P500	PDI G101	steel		Not Recommended
	P500GT	PDI G101	Steel		Not Recommended
	800	PDI G101	Steel		Not Recommended
	802	PDI G101	Steel		Not Recommended
	811	A112.14.3-A PDI-G101	Thermo-plastic		Limited Application

Manufacturer	Series	Standard Certified to	Materials of Construction	Recommendation	
Josam Company	60100H EXT/ET/RT	PDI G101	Steel		Not Recommended
	60100H-SS EXT/ET/RT	PDI G101	Stainless Steel		Limited Application
	60110-A	none	Steel		Not Recommended
	60210-A	none	Steel		Not Recommended
	60100-SA	none	Steel		Not Recommended
MIFAB, Inc.	Lil Max	A112.14.3-A PDI G101 CSA B481.1	Thermo-plastic		Limited Application
	Big Max	A112.14.3-A PDI-G101	HDPE		Limited Application
	MI-G	A112.14.3-A PDI-G101	Steel		Not Recommended
	MI-G-SS	A112.14.3-A PDI-G101	Stainless Steel		Limited Application
	XL-MI-G	A112.14.3-A	Steel		Not Recommended
	MI-G-SD	PDI G101	Steel		Not Recommended
	MI-G-SDH	none	Steel		Not Recommended
	MCL-G	PDI G101	Steel		Not Recommended
Rockford Separators	RP	A112.14.3-A PDI-G101	Steel		Not Recommended
	RP-SS	A112.14.3-A	Stainless Steel		Limited Application
	R-Poly	PDI G101	HDPE		Limited Application

Manufacturer	Series	Standard Certified to	Materials of Construction	Recommendation	
Schier Products	GB 15 to 50	A112.14.3-C CSA B481.1	HDPE		Limited Application
	GB1, GB2, GB3	A112.14.3-C CSA B481.1	HDPE		Limited Application
	GB75 GB250	A112.14.3-C CSA B481.1	HDPE		Approval Recommended
Thermaco, Inc.	TZ160	A112.14.3-A	Thermo-plastic		Limited Application
	TZ400 TZ600	A112.14.3-A	Thermo-plastic		Approval Recommended
	TZ1826	A112.14.3-A PDI-G101	Thermo-plastic		Approval Recommended
Wade Specification Drainage Products	5100	PDI G101	Steel		Not Recommended
	5101	PDI G101	Stainless Steel		Limited Application
	5102	none	Steel		Not Recommended
	5103	none	Steel		Not Recommended
	5105	PDI G101	Steel		Not Recommended
	5200	none	Steel		Not Recommended
Watts Water Technologies	WD	PDI G101	Steel		Not Recommended
	WD-L	PDI G101	Steel		Not Recommended
	WD-A	none	Steel		Not Recommended
	GI-K	none	Steel		Not Recommended
	GP	PDI G101	Steel		Not Recommended

Manufacturer	Series	Standard Certified to	Materials of Construction	Recommendation	
Zurn Green Turtle	Retroceptor	PDI G101 CSA B481.1-A	Polymer		Limited Application
	Proceptor	PDI G101 CSA B481.1-A	Fiberglass		Limited Application
Zurn Industries	Z1165	PDI G101	Steel		Not Recommended
	Z1170	A112.14.3-A PDI-G101	Steel		Not Recommended
	Z1170-ZS	A112.14.3-A PDI-G101	Stainless Steel		Limited Application
	Z1171	A112.14.3-A PDI-G101	Steel		Not Recommended
	Z1171-ZS	A112.14.3-A PDI-G101	Stainless Steel		Limited Application
	Z1171-RD	PDI G101	Steel		Not Recommended
	Z1172 (900) (1000)	A112.14.3-A PDI-G101	Steel		Not Recommended
	Z1172-ZS (900) (1000)	A112.14.3-A PDI-G101	Stainless Steel		Limited Application
	Z1173 20 to 75 GPM	A112.14.3-A PDI-G101	Steel		Not Recommended
	Z1173-RD	PDI G101	Steel		Not Recommended
	Z1173-TD	PDI G101	Steel		Not Recommended
	GT2700	PDI G101	Steel		Not Recommended
	GT2701	A112.14.3-A PDI-G101	Steel		Not Recommended
	GT2702	PDI G101	HDPE		Limited Application

ASHLAND POLYTRAP

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4800 series:

These are interior HGIs made from HDPE and come with a limited lifetime warranty. They are rectangular in shape, have bolt-on light duty poly covers and require manufacturer-fabricated bolt-on risers for buried installations. Optional diamond plate covers are required for pedestrian traffic areas. Risers must be custom built at the factory. The units are tested and rated to meet PDI G101 and require a vented external flow control for all installations.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
4804	4	8	8	2.3	47.9%	2.9''	Interior
4807	7	14	14	5.6	34.4%	2.2''	Interior
4810	10	20	20	7.3	37.7%	2.8''	Interior
4815	15	30	30	12.1	34.1%	2.8''	Interior
4820	20	40	40	17.6	31.3%	3.0''	Interior
4825	25	50	50	24.8	27.8%	3.2''	Interior
4835	35	70	70	30.0	32.1%	3.9''	Interior
4850	50	100	100	40.5	34.0%	4.1''	Interior
75*	75*	150*	-	61.8	-	-	Interior

*Certification pending, data not confirmed
**Data estimated from dimensional calculations

Series only suitable for indoor pedestrian traffic, which requires an upgraded cover. Units are only certified up to 50 GPM, which limits the total number of fixtures that can be connected. Units are only certified to the minimum grease capacity of PDI G101, which increases cleaning frequency.

Literature claims this series is listed with IAPMO and UPC. UPC is a trademark of IAPMO, the use of which implies the product has been certified by IAPMO. IAPMO does not certify grease interceptors to PDI G101. A request for copies of the

manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

APGI Series:

These are being sold as "large capacity" grease interceptors, but they are not tested and rated for performance. They are made from HDPE for interior installations in non-traffic rated areas, with optional steel or aluminum tread plate covers for pedestrian traffic areas. Risers must be custom built at the factory.

Model #	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full	Depth of Grease in Inches When Full	Interior, Exterior, or both
APGI-100	100*	250*	-	125	-	-	Interior
APGI-150	150*	350*	-	186	-	-	Interior
APGI-225	225*	500*	-	300	-	-	Interior
APGI-250	250*	625*	-	405	-	-	Interior
APGI-350	350*	850*	-	560	-	-	Interior

These units are not tested and rated for performance, which means grease capacity claimed cannot be substantiated and efficiency of operation is unknown.

Literature claims grease capacities that are not substantiated, which could lead to compliance problems for facilities that use the information. A request for copies of the manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

ENDURA SEPARATION TECHNOLOGIES (formerly Canplas Endura)

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Barrie, ON L4M 4V3 Canada
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www.enduraninterceptor.com (Canada)
www.enduragreasemanagement.com (USA)

Endura Series

These are injection molded thermoplastic HGIs, normally installed indoors above or below grade, and come with a limited 10-year warranty. They are rectangular in shape with an innovative clip-style locking system instead of bolts or screws to hold the cover in place. Endura uses an injection molded modular riser extension (1 to 6 inches of adjustment) that can be stacked up to three (3) high to add an additional 18 inches of invert when burying these units. These units are all third-party certified to ASME A112.14.3 Type A, PDI G101 and CSA B481.1. They require an external vented flow control. The covers have a CSA 'L' rating for a minimum proof load of 600 pounds, expected operational load of 300 pounds and are suitable for pedestrian traffic.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
3907A	7	31.95	31.95	12.96	33.9%	4.0''	Interior
3910A	10	38.07	38.07	12.96	40.4%	4.8''	Interior
3915A	15	40.97	40.97	12.96	43.5%	5.1''	Interior
3920A	20	76.4	76.4	21.6	48.7%	5.7''	Interior
3925ALO	25	62.59	62.59	24	35.9%	2.7''	Interior
3925A2"	25	72.55	72.55	30.6	32.6%	3.9''	Interior
3925A3"	25	73.01	73.01	29.5	34.1%	3.6''	Interior
3935A	35	138.5	138.5	39.4	48.4%	5.3''	Interior
3950A	50	122.07*	122.07*	52	32.3%	5.5''	Interior

* This unit was not tested to breakdown, but this is the capacity at last test increment.
**Data estimated from dimensional calculations

Suitable for pedestrian traffic, which limits the installation location to interior unless installed above grade. The product does include a UV Stabilizer, but should still be protected from direct sunlight by foliage or enclosure. The series only offers flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. Internal components are removable for servicing, however the influent and effluent are not visible for inspection with the internal components in place.

Endura XL

In the relatively new category of high-capacity HGIs, the Endura XL is a legitimate competitor. They are made from durable thermoplastic and come with a limited lifetime warranty. They are designed for indoor or outdoor, above or below grade installations. The units are certified to PDI G101, ASME A112.14.3 Type A (external vented flow control) and Type C (integral flow control) and CSA B481.1. The units are shipped with an integral flow control (Type C) that is incorporated in a dynamic inlet baffle, which opens like a clamshell revealing the flow control. The built-in flow control can be accessed from grade even when buried at maximum depth (72”). To install the units as Type A or PDI G101, a vented external flow control must be purchased and installed upstream of the interceptor and the integral flow control must be removed and discarded. These units use stackable risers that are cut to length in the field. Units are available with either 75 or 100 GPM flow rates and their grease storage capacities depend upon whether an external vented flow control or the integral flow control are used. Units also come with three outlet options and the injection-molded covers are designed in accordance with AASHTO H20/HS20 for vehicle traffic loading requirements. They are also tested and approved to CSA B481.0 Class “S” for internal or external installations and Class "M" for internal or non-vehicle traffic. For more information on cover load design and testing criteria, see Appendix B: Understanding Cover Load-Rating Requirements.

Model*	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
XL75-A PDI	75	559	218	158	19.0%	5.1''	Both
XL100-A PDI	100	1058	293	257	15.7%	5.1''	Both
XL75-C	75	208	208	158	18.1%	4.9''	Both
XL100-C	100	288	288	257	15.4%	5.2''	Both
XL75-A NSF	75	559	559***	158	48.7%	13.2''	Both
XL100-A NSF	100	1058	1058***	257	56.7%	18.4''	Both

* -A = PDI G101 or ASME A112.14.3 Type A, with vented external flow control

* -C = ASME A112.14.3 Type C, with integral or built-in flow control

**Data estimated from dimensional calculations

***The Endura XL series high-capacity HGIs with a vented external flow control were tested to a Rated Grease Capacity to meet the minimum performance requirements of PDI G101, ASME A112.14.3 Type A and CSA B481.1, which means they were not tested to breakdown to these standards. Both units were also tested

with an integral or built-in flow control to the minimum performance requirements of ASME A112.14.3 Type C.

The higher capacities shown for the units come from testing by NSF International, which used an accelerated protocol based off of PDI G101 and ASME A112.14.3 Type A. NSF formalized this test procedure in their published *Specifications for a Special Engineered (SE) Product*, titled, NSF SE 15741. For more information on the NSF standard, see Appendix A: Summary of Accelerated Protocol in NSF SE 15741.

NSF conducted a conforming test to ASME A112.14.3 Type A for the XL75 unit to validate the data reported under SE 15741. The results of the conforming test demonstrated that the accelerated protocol understated the grease capacity by 14% (559 vs. 649 lbs), while overstating the average efficiency by only two (2) percentage points (98 vs. 96%). The validation test supports a conclusion that these units will perform at least as well as the accelerated protocol predicts within a satisfactory margin of error.

When compared to the capacities of much larger and less efficient concrete gravity grease interceptors, these units offer superior performance and comparable operational grease storage capacities. The advantage to these units is that they are tested and rated for performance, while gravity grease interceptors are not. The larger grease storage capacities ensure longer and more affordable pump-out schedules for consumers. The narrow width (32 inches) means they can fit through man-doors and be installed in tighter indoor locations such as basements or crawl spaces.

While the test results of NSF SE 15741 support acceptance of the certification, the fact remains that this standard is not an approved standard under any of the national model plumbing codes, nor under any state, municipal or local plumbing codes. Further, sales literature and technical documents do not make clear exactly where the higher grease storage capacities came from nor whether these numbers can be relied upon when using the built-in flow control. The conforming test results conducted on both the XL75 and the XL100 indicate lower efficiencies when using the built-in flow control, which calls into doubt whether the units could actually achieve the same grease storage capacities without the use of a vented external flow control.

FOG Enforcer

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FE 7 to 50 GPM series

These are indoor thermoplastic HGIs that come with a limited lifetime warranty. They are manufactured and private labeled for use by MIFAB, Inc., for FOG Enforcer. They are rectangular and incorporate a clip-style locking mechanism for the pedestrian traffic rated covers. Extensions offered are custom fabricated epoxy coated steel. Units require a vented external flow control and are certified and listed by MIFAB to meet the minimum performance requirements of PDI G101, ASME A112.14.3 Type A and CSA B481.1.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
FE-7	7	43	14	5.8	33.2%	2.7''	Interior
FE-10	10	48	20	8.5	32.4%	2.8''	Interior
FE-15	15	57	30	13	31.8%	3.9''	Interior
FE-20	20	84	40	16	34.4%	3.2''	Interior
FE-25	25	110	50	23	29.9%	4.0''	Interior
FE-35	35	98	70	39	24.7%	3.8''	Interior
FE-50	50	125	100	44	31.3%	5.4''	Interior
FE-25-LO	25	90	50	19	36.2%	2.7''	Interior

**Data estimated from dimensional calculations

Only suitable for pedestrian traffic, which limits the installation location to interior only. The series only offers flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. Internal components are removable for servicing, however the influent and effluent are not visible for inspection with the internal components in place.

Grease capacity claimed is unsubstantiated and questionable. The FE-7 is claimed to hold 43 pounds of grease, which would be 102% of the total liquid capacity of the interceptor. This raises doubts as to the validity of any of the claimed capacities for this series. A request for copies of the manufacturer's test reports, which would

have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

FE Super Capacity Series

In the category of high-capacity HGIs this is MIFABs concept, manufactured and private labeled for FOG Enforcer. The design offers durable HDPE construction and a limited lifetime warranty. They are intended for indoor or outdoor, above or below grade installations. Certified units require an external vented flow control. Only the 75 and 100 GPM units are certified for MIFAB to PDI G101 and ASME A112.14.3 Type A. The 100 GPM unit is also certified for MIFAB to CSA B481.1. The risers are 18-inch standard corrugated drainage pipe with 18-inch long pieces offered as standard. The risers can be field cut to desired length. The steel encased composite covers offer a true AASHTO M306 H20 vehicle traffic rating. For more information on cover load design and testing criteria, see Appendix B: Understanding Cover Load-Rating Requirements.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
FE-750	75	880	150	140	14.8%	3.5''	Both
FE-1150	100	1300	200	300	9.2%	3.3''	Both
FE-1900	150	2050	-	440	-	-	Both
FE-2600	150	2600	-	600	-	-	Both
FE-3900	150	3900	-	900	-	-	Both

**Data estimated from dimensional calculations

The only certified units in this series are the FE-750 and FE-1150. The FE-750 was only tested to 15 increments with a total grease storage capacity of 213 pounds. The FE-1150 was only tested to the 13th increment with a total grease storage capacity of 254 pounds. Claims of higher grease storage capacities are unsubstantiated and should not be relied upon for determining pump-out frequencies.

The FE-1900, FE-2600 and FE-3900 are not tested and rated for performance, which means the grease capacity claimed cannot be substantiated and the efficiency of operation is unknown.

This manufacturer is claiming grease capacities that are not substantiated, substituting fictitious capacities in place of actual certified capacities or inventing capacities when no certification has taken place. This can and will lead to compliance problems for consumers. A request for copies of the manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

This manufacturer also uses the terms "Grease Design Capacity", "Grease Capacity", "FOG Design Capacity", and "FOG Capacity" interchangeably throughout literature, which misleads consumers into believing the capacities claimed are valid and reliable.

Jay R Smith Mfg. Co.

2781 Gunter Drive East
Montgomery, AL 36109-0237
Phone: 334-277-8520
www.jrsmith.com

8000 Series

This series is made from fabricated steel and is guaranteed to fail. Units from 7 to 50 GPM are certified to the minimum performance requirements of PDI G101. The 20 GPM low profile unit is also made from fabricated steel and is certified to the minimum performance requirements of PDI G101. All units require a vented external flow control.

8000GT Series

This is a semi-automatic draw-off series with valve and hard-pipe connection on the top of the units. They are made from fabricated steel and are guaranteed to fail. These units are not certified for performance.

8400 Series

This is a “large capacity” series. They are made from fabricated steel and are guaranteed to fail. Only the 8450 (75 GPM) unit is certified to the minimum performance requirements of PDI G101 and requires a vented external flow control. The rest of the units in the series are not certified for performance.

P500 Series

This series is made from fabricated steel and is guaranteed to fail. Units from 7 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

P500GT Series

This is another semi-automatic series with a draw-off valve on the end of the unit on the outlet side. They are made from fabricated steel and are guaranteed to fail. Units from 7 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

800 Series

This series is made from fabricated steel and is guaranteed to fail. Units from 7 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

802 Series

This is another semi-automatic series with a draw-off valve on the end of the unit on the outlet side. They are made from fabricated steel and are guaranteed to fail. Units from 7 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

811 Series

This series is made from durable thermoplastic by Endura. They are rectangular in shape with an innovative clip locking system instead of bolts or screws to hold the cover in place. Units use a pre-fabricated modular six (6) inch riser that can be stacked up to three (3) high to add an additional 18 inches of invert when burying these units. Units are all certified to ASME A112.14.3 Type A and PDI G101 and require an external vented flow control. The covers have a maximum load rating of 440 pounds and are suitable for pedestrian traffic only.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
811-Y02-15	15	30	30	19.91	20.7%	2.3''	Interior
811-Y02-20	20	40	40	19.91	27.7%	3.1''	Interior
811-Y02-25	25	50	50	19.02	36.2%	3.8''	Interior
811-Y02-35	35	70	70	34.69	27.8%	3.1''	Interior
811-Y02-50	50	100	100	52.82	26.1%	4.4''	Interior

**Data estimated from dimensional calculations

Only suitable for pedestrian traffic, which limits the installation location to interior only. The series only offers flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. Internal components are removable for servicing, however the influent and effluent are not visible for inspection with the internal components in place.

Josam Company

525W US Highway 20
Michigan City, IN 46360-0360
Phone: 219-872-5531
www.josam.com/catalog/JOS/line/GI

60100H/EXT/ET/RT

This series is made from fabricated steel and is guaranteed to fail. Units are certified to the minimum performance requirements of PDI G101. All units require a vented external flow control.

60100H-SS/EXT/ET/RT

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
60102H-SS	7	14	14	6.07	31.8%	2.3''	Interior
60103H-SS	10	20	20	7.83	35.2%	2.6''	Interior
60104H-SS	15	30	30	12.75	32.4%	2.8''	Interior
60105H-SS	20	40	40	18.03	30.5%	3.2''	Interior
60106H-SS	25	50	50	24.97	27.6%	3.2''	Interior
60107H-SS	35	70	70	33.82	28.5%	3.7''	Interior
60108H-SS	50	100	100	46.16	29.8%	4.5''	Interior
60109H-SS	75	150	150	107.29	19.2%	3.8''	Interior
60110H-SS	100	200	200	149.55	18.4%	3.9''	Interior

**Data estimated from dimensional calculations

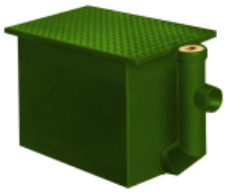
The series is offered in fabricated stainless steel (-SS). Risers must be custom built at the factory. Durable stainless steel construction will ensure longevity in service. The limited grease capacities will require increased cleaning frequencies for consumers.

60110-A

This is a low-profile series offered in 20 GPM and 35 GPM flow rates. These units are made from fabricated steel and are not certified for performance.

60210-A

This series offers an external outlet and are made from fabricated steel and guaranteed to fail. These units are not certified for performance.



60100-SA

This is a semi-automatic draw-off series. These units are made from fabricated steel and guaranteed to fail. They are not certified for performance.

MIFAB, Inc.

1321 West 119th Street
Chicago, IL 60643
Phone: 800-465-2736
www.mifab.com/grease-oil-solids-interceptors.html

Lil Max Series

These are indoor thermoplastic HGIs that come with a limited lifetime warranty. They are rectangular in shape and borrow from Endura a similar clip-style locking mechanism for the pedestrian traffic rated covers. Extensions offered are custom fabricated epoxy coated steel. Units require a vented external flow control and are certified and listed to meet the minimum performance requirements of PDI G101, ASME A112.14.3 Type A and CSA B481.1.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
MI-G-1-PL	7	14	14	5.8	33.2%	2.7''	Interior
MI-G-2-PL	10	20	20	8.5	32.4%	2.8''	Interior
MI-G-3-PL	15	30	30	13	31.8%	3.9''	Interior
MI-G-4-PL	20	40	40	16	34.4%	3.2''	Interior
MI-G-5-PL	25	50	50	23	29.9%	4.0''	Interior
MI-G-6-PL	35	70	70	39	24.7%	3.8''	Interior
MI-G-7-PL	50	100	100	44	31.3%	5.4''	Interior
MI-G-L-25-PL	25	50	50	19	36.2%	2.7''	Interior

**Data estimated from dimensional calculations

Only suitable for pedestrian traffic, which limits the installation location to interior only. The series only offers flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. Internal components are removable for servicing, however the influent and effluent are not visible for inspection with the internal components in place.

Big Max Series

In the category of high-capacity HGIs this is MIFABs concept. The design offers durable HDPE construction and a limited lifetime warranty. They are intended for indoor or outdoor, above or below grade installations. Units require an external vented flow control. Both units are certified to PDI G101 and ASME A112.14.3 Type A. The 100 GPM unit is also certified to CSA B481.1. The risers are 18-inch standard corrugated drainage pipe with 18-inch long pieces offered as standard. The risers can be field cut to desired length. The steel encased composite covers offer a true AASHTO M306 H20 vehicle traffic rating. For more information on cover load design and testing criteria, see Appendix B: Understanding Cover Load-Rating Requirements.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
Max750G	75	750	150	140	14.8%	3.5''	Both
Max1150G	100	1150	200	300	9.2%	3.3''	Both

**Data estimated from dimensional calculations

The Max750G was only tested to the 15th increment with a total grease storage capacity of 213 pounds. The Max1150G was only tested to the 13th increment with a total grease storage capacity of 254 pounds. Claims of higher grease storage capacities are unsubstantiated and should not be relied upon for determining pump-out frequencies.

This manufacturer is claiming grease capacities that are not substantiated, substituting fictitious factory estimates in place of actual certified capacities. This can and will lead to compliance problems for consumers. A request for copies of the manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

This manufacturer also uses the term "Grease Design Capacity" throughout literature, which misleads consumers into believing the capacities claimed are valid and reliable.

This manufacturer claims the Max750G is certified to CSA B481.1, however, neither IAPMO nor the CSA Group list this unit as certified to that standard. If the unit is not certified to CSA B481.1, then this is an invalid claim and an inappropriate use of the CSA mark.

MI-G Series 4 to 50 GPM

This is a fabricated steel HGI series, and while these units are certified to PDI G101 and ASME A112.14.3 Type A, their steel construction is guaranteed to fail. Units require a vented external flow control.

MI-G-SS Series 4 to 50 GPM

This series is made from 14-gauge Type 304 stainless steel and the units are certified to PDI G101 and ASME A112.14.3 Type A, requiring a vented external flow control. Risers must be custom built at the factory.

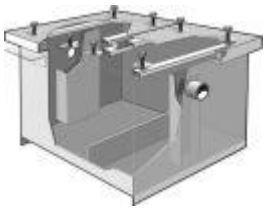
Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
MI-G-0-SS	4	8	8	4.3	25.6%	1.9''	Interior
MI-G-1-SS	7	14	14	6	32.1%	2.4''	Interior
MI-G-2-SS	10	20	20	9.74	28.3%	2.4''	Interior
MI-G-3-SS	15	30	30	13.59	30.4%	3.2''	Interior
MI-G-4-SS	20	40	40	16.18	34.0%	4.3''	Interior
MI-G-5-SS	25	50	50	23.34	29.5%	3.7''	Interior
MI-G-6-SS	35	70	70	41.31	23.3%	3.5''	Interior
MI-G-7-SS	50	100	100	46.82	29.4%	5.0''	Interior

**Data estimated from dimensional calculations

The durable stainless steel construction will ensure longevity in service, but the series only offers flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. The limited grease capacities will require increased cleaning frequencies for consumers.

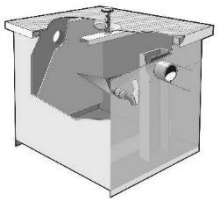
XL-MI-G Series

MIFAB calls this series “large capacity”, but only the XL-MI-G-0 (75 GPM) and XL-MI-G-1 (100 GPM) units are certified to ASME A112.14.3 Type A to the minimum performance requirements of the standard. All units in the series are made from fabricated steel and are guaranteed to fail.



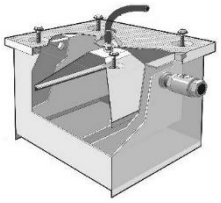
MI-G-SD Series

This is an alternative design for semi-automatic draw off that uses a grease draw-off valve on the end of the unit on the outlet side. The units are certified to PDI G101, are made from fabricated steel and are guaranteed to fail.



MI-G-SDH Series

This is MIFAB’s semi-automatic draw-off series. These units are made from fabricated steel, are not certified for performance and are guaranteed to fail.



MCL-G Economy Series

This is MIFAB’s price point series made from lighter 14-gauge fabricated steel. Units are certified to PDI G101 and require a vented external flow control. The lighter gauge steel guarantees these units will fail even faster.

Rockford Separators

5159 28th Avenue
Rockford, IL 61109
Phone: 815-229-5077
www.rkfdseparators.com

RP Series

This is Rockford's standard HGI series made from fabricated steel and are guaranteed to fail. The 4 to 50 GPM units are certified to the minimum requirements of PDI G101 and ASME A112.14.3 Type A. The 75 and 100 GPM units do not appear to be certified. All units in the series require a vented external flow control.

RP-SS Series

The RP Series is also offered in all-welded stainless steel and comes with a lifetime warranty. The 4 to 50 GPM units are certified to the minimum performance requirements of PDI G101 and ASME A112.14.3 Type A. The 75 and 100 GPM units do not appear to be certified. All units in the series require a vented external flow control. Units come with nonskid diamond treadplate cover for pedestrian traffic and "leakproof" gasket. Risers must be custom built at the factory.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)*	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
RP-4-SS	4	18	8	3.90	28.2%	1.7''	Interior
RP-7-SS	7	27	14	5.52	34.9%	3.0''	Interior
RP-10-SS	10	42	20	7.51	36.7%	3.1''	Interior
RP-15-SS	15	68	30	11.33	36.5%	3.1''	Interior
RP-20-SS	20	77	40	13.09	42.1%	3.4''	Interior
RP-25-SS	25	103	50	20.31	33.9%	4.1''	Interior
RP-35-SS	35	153	70	29.09	33.1%	5.1''	Interior
RP-50-SS	50	201	100	38.05	36.2%	5.6''	Interior
RP-75-SS	75	451	-	90.91	-	-	Interior
RP-100-SS	100	621	-	125.61	-	-	Interior

**Data estimated from dimensional calculations

The durable stainless steel construction will ensure longevity in service, but the units' limited capacities will require more frequent pump-outs at increased cost to consumers.

This manufacturer is claiming grease capacities that are not substantiated, which could lead to compliance problems for facilities that use the information. A request for copies of the manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

RPD Series

This is Rockford's semi-automatic draw-off series. They are made from fabricated steel and are guaranteed to fail. They are certified to ASME A112.14.3 Type A and require a vented external flow control.

R-Poly Series

These are interior HGIs made from durable HDPE. They are rectangular in shape, have bolt on light duty poly covers and require manufacturer-fabricated bolt-on risers for buried installations. These units share a cross-listing certification with Ashland Polytraps to PDI G101. Units require a vented external flow control.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
R-POLY-07	7	30	14	5.6	34.4%	2.3''	Interior
R-POLY-10	10	38	20	7.3	37.7%	2.8''	Interior
R-POLY-15	15	60	30	12.1	34.1%	2.9''	Interior
R-POLY-20	20	88	40	17.6	31.3%	3.0''	Interior
R-POLY-25	25	125	50	24.8	27.8%	3.2''	Interior
R-POLY-35	35	151	70	30	32.1%	4.0''	Interior
R-POLY-50	50	204	100	40.5	34.0%	4.2''	Interior

**Data estimated from dimensional calculations

Units are only suitable for indoor pedestrian traffic, which requires an upgraded cover. Units are only certified up to 50 GPM, which limits the total number of fixtures that can be connected. Units are only certified to the minimum grease capacity of PDI G101, which increases cleaning frequency.

This manufacturer is claiming grease capacities that are not substantiated, which could lead to compliance problems for facilities that use the information. A request for copies of the manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

This manufacturer uses the term "Greasy Sludge Capacity" throughout specifications, literature and online tables, which misleads consumers regarding the actual certified capacities of their devices. There is no certification for Greasy Sludge Capacity, therefore the capacities claimed cannot be substantiated.

The "G", "GF", "GFE", "GIS", and "RTO" series are all made from fabricated steel and are guaranteed to fail when used as commercial grease interceptors.

Schier Products

9500 Woodend Road
Edwardsville, KS 66111
Phone: 913-951-3300
Website: www.schierproducts.com

Great Basin 15 to 50 GPM

Schier introduced the Great Basin 15 to 50 GPM series in 2012. The design was an obvious departure from traditional rectangular configurations of most other products in the indoor category. They are made from durable HDPE and come with a limited lifetime warranty. These units are designed for interior installations with 2000-pound load rated covers, except the GB-50, which is suitable for both interior and exterior installations. Covers are secured to the body by 4 screws. On the GB-15 through GB-25, a 16-inch high riser is available. On the GB-35 and GB-50, the risers come in short or long heights for deeper bury depths. All risers are designed to be cut to length in the field. All units are tested and rated to exceed the minimum performance requirements of ASME A112.14.3 Type C and CSA B481.1. All units incorporate a built-in or integral flow control that does not need to be vented. Units also have three outlet options for ease of installation. Schier reports that this series will be discontinued effective December 31, 2017, replaced by the GB1, GB2 and GB3 series.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full*	Depth of Grease in Inches When Full*	Interior, Exterior, or both
GB-15	15	74	74	16	63%	5.0''	Interior
GB-20	20	109	109	22	68%	6.6''	Interior
GB-25	25	75	75	22	47%	4.4''	Interior
GB-35	35	142	142	35	56%	6.2''	Interior
GB-50	50	249	249	52	66%	9.1''	Both

*Data provided by manufacturer

While these units are superior in many ways to traditional HGI designs, they still only offer flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. Internal components are removable for servicing, however the influent and effluent are not visible for inspection due to the location of the inlet and outlet diffuser underneath the shoulders of the units.

GB-1, GB-2, GB-3

Effective May 1, 2017, Schier has introduced a redesigned indoor-only HGI made from durable HDPE with a limited lifetime warranty. Units are suitable for above or below grade installations and come with a larger pedestrian traffic rated cover with 450-pound load rating. These units offer newly re-designed inlet and outlet diffusers, both of which are now removable from finish grade by means of threaded boss and two 12 inch lengths of PVC pipe that will ship with each riser to extend access to the diffusers when buried. Both diffusers have large open tops for easy inspection and cleaning. The field cut riser system is also an upgrade over previous designs in that the riser sits completely exterior to the unit and are also designed to be cut to length in the field. Each unit is also certified to ASME A112.14.3 Type C and CSA B481.1 at dual flow rates. All units incorporate a built-in or integral flow control that does not need to be vented. Units also have three outlet options for ease of installation.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full*	Interior, Exterior, or both
GB-1	20	70	70	10	96.4%	5.0''	Interior
	25	64.9	64.9	10	89.4%	4.6''	Interior
GB-2	35	130.5	130.5	20	89.8%	6.3''	Interior
	50	127.6	127.6	20	87.8%	6.1''	Interior
GB-3	50	272.7	272.7	40	93.9%	12.8''	Interior
	75	175.6	175.6	40	60.4%	8.3''	Interior

*Data provided by manufacturer

**Data estimated from dimensional calculations

While these units are superior in many ways to traditional HGIs and the earlier indoor Great Basin designs, they are intended for indoor only installations and combined with their limited grease storage capacities, will have a restricted application.

GB-75 and GB-250

Schier pioneered the high-capacity hybrid HGI concept that offered a legitimate alternative to larger and less efficient residential septic tanks that were being used as commercial gravity grease interceptors. These units, which were launched in 2006, are made from durable HDPE and come with the industry's original lifetime warranty. They are built for indoor or outdoor, above or below grade installations with cover options from pedestrian to heavy traffic ratings. True AASHTO M306 H20 cover load ratings are achieved with an optional cast iron cover (for more information on cover load design and testing criteria, see Appendix B: Understanding Cover Load-Rating Requirements). Risers are offered in short and long heights and are designed to be cut to length in the field. All units are tested and rated to exceed the minimum performance requirements of ASME A112.14.3 Type C and CSA B481.1. All units incorporate a built-in or integral flow control that does not need to be vented. Units also have three outlet options for ease of installation. The inlet and outlet diffusers are six (6) inches in diameter and open at the top to allow for easy inspection and cleaning.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full*	Depth of Grease in Inches When Full*	Interior, Exterior, or both
GB-75	75	616	616	125	68%	16.6''	Both
GB-250	100	1076	1076	275	54%	18.8''	Both

*Data provided by manufacturer

When compared to the capacities of much larger and less efficient concrete gravity grease interceptors, these units offer superior performance and comparable grease storage capacities. The advantage to these units is that they are tested and rated for performance to the rigorous requirements of nationally accepted standards, while gravity grease interceptors are not. Their larger grease storage capacities ensure longer and more affordable pump-out schedules for consumers. Their narrow width (33.5 inches or less) means they can fit through man-doors and be installed in tighter indoor locations such as basements.

Thermaco, Inc.

646 Greensboro Street
Asheboro, NC 27203-2548
Phone: 336-629-4651
www.thermaco.com/trapzilla

TZ-160, TZ-400, TZ-600

These units were among the earliest versions of high-capacity hybrid HGIs in 2007 and 2008. They are made from a durable thermoplastic and come with a limited lifetime warranty. Units are designed for indoor or outdoor, above or below grade installations. Unit covers are suitable for pedestrian traffic only regardless of location of installation. Units have an invert of 13 inches and come with built-in riser(s) that offer up to an additional 18 inches of invert. Thermaco offers an Extension Collar Assembly, which provides an additional 29 inches and can be stacked to provide up to a maximum 60 inches of invert. These units are all certified to ASME A112.14.3 Type A and require an external vented flow control that Thermaco calls a Vented Flow Control Assembly (VFCA), which is *not* shipped with the unit and must be purchased separately.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full*	Depth of Grease in Inches When Full*	Interior, Exterior, or both
TZ-160	35	168	168	27	85.7%	13.0''	Both
TZ-400	75	406	406	70	79.9%	9.4''	Both
TZ-600	75	636	636	95	92.2%	17.0''	Both

*Data provided by manufacturer

The TZ-160 has a flow rate of 35 GPM, which limits the number of fixtures that can be connected to it restricting its application.

The TZ-400 and TZ-600 are both viable choices for consumers. The 75 GPM flow rate of both units allows for more fixtures to be connected and their larger grease storage capacities ensure longer and more affordable pump-out schedules for consumers. Their relatively small footprint means they can fit through man-doors and be installed in tighter indoor locations such as basements. The TZ-600 is also a strong alternative to smaller gravity grease interceptors offering certified performance to a rigorous nationally accepted standard, while gravity grease interceptors are not.

TZ-1826

In 2015 Thermaco launched its biggest HGI yet. This unit is by far and away the leader for high-capacity hybrid HGIs in the 100 GPM category. The unit is made from a durable thermoplastic and comes with a limited lifetime warranty. The unit is designed for indoor or outdoor, above or below grade installations. The units' covers are suitable for pedestrian traffic only regardless of location of installation (for more information on cover load design and testing criteria, see Appendix B: Understanding Cover Load-Rating Requirements). The unit has an invert of 13 inches and comes with built-in risers that offer up to an additional 18 inches of invert. Thermaco offers an Extension Collar Assembly, which provides an additional 29 inches and can be stacked to provide up to a maximum 60 inches of invert. The unit is certified to ASME A112.14.3 Type A and PDI G101 and requires an external vented flow control that Thermaco calls a Vented Flow Control Assembly (VFCA), which is *not* shipped with the unit and must be purchased separately.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full*	Depth of Grease in Inches When Full*	Interior, Exterior, or both
TZ-1826	100	1826	1826	274	91.8%	25.0''	Both

*Data provided by manufacturer

Boasting the highest efficiency rating of any high-capacity hybrid HGI and the largest grease storage capacity of any interceptor in the 100 GPM category, this unit will provide the longest and most affordable pump-out schedule over any of its competitors. When compared to concrete gravity grease interceptors, this unit is the strongest alternative offering the advantage of being tested and rated for performance to the rigorous requirements of two nationally accepted standards, while gravity grease interceptors are not. The only knock against this device is that it does not offer vehicle traffic rated covers, which limits installation locations potentially restricting its application.

The manufacturer makes it difficult to determine what the flow control requirements are for any of its devices, when they are all in fact certified with a vented external flow control. They ship a Low Head Flow Control (LHFC), which does not appear to require a vent, but that is not how the units are certified.

Wade Specification Drainage Products

11910 Country Rd. 492
Tyler, TX 75706
Phone: 903-882-5511
www.wadedrains.com

5100 Series 7 to 50 GPM

This series is made from fabricated steel and is guaranteed to fail. Units from 7 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

5101 Series 7 to 50 GPM

This is the fabricated Type 304 stainless steel version of the 5100 series. Units come with removable baffle, and gasketed diamond treadplate covers. They are certified to the minimum performance requirements of PDI G101 and require a vented external flow control. Risers must be custom built at the factory.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
5101-07	7	14	14	5.4	35.7%	2.7''	Interior
5101-10	10	20	20	7.3	37.7%	3.3''	Interior
5101-15	15	30	30	11	37.6%	3.1''	Interior
5101-20	20	40	40	12.6	43.7%	3.6''	Interior
5101-25	25	50	50	19.8	34.8%	4.3''	Interior
5101-35	35	70	70	28.6	33.7%	5.4''	Interior
5101-50	50	100	100	37.4	36.8%	5.9''	Interior

**Data estimated from dimensional calculations

The durable stainless steel construction will ensure longevity in service, but the units' limited capacities will require more frequent pump-outs at increased cost to consumers. The limited range of flow rates for certified units also restricts the number of connected fixtures.

5102 Series

This is a semi-automatic series with a draw-off valve on the end of the unit on the outlet side. They are made from fabricated steel and are guaranteed to fail. These units are not certified for performance.

5103 Series

This is a semi-automatic draw-off with valve and hose on the top of the unit. They are made from fabricated steel and are guaranteed to fail. These units are not certified for performance.

5105 Series

This is a series of low profile units made from fabricated steel and guaranteed to fail. Units are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

5200 Series

This is a “large capacity” series. They are made from fabricated steel and are guaranteed to fail. These units are not certified for performance.

Watts Water Technologies

815 Chestnut Street
North Andover, MA 01845
Phone: 978-688-1811
www.watts.com

WD Series

This series is made from fabricated steel and is guaranteed to fail. Units from 4 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

WD-L Series

These low-profile units are made from fabricated steel and guaranteed to fail. The 20 and 35 GPM units are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

WD-A Series

This is Watts semi-automatic draw-off with valve and hose on the top of the unit. They are made from fabricated steel and are guaranteed to fail. These units are not certified for performance.

GI-K Series

This is Watt's "large capacity" series. They are made from fabricated steel and are guaranteed to fail. These units are not certified for performance.

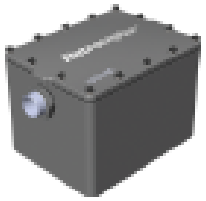
GP Series

This series is made from fabricated steel and is guaranteed to fail. Units from 4 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

Zurn Green Turtle

2709 Water Ridge Parkway
Suite 410
Charlotte, NC 28217
Phone: 877-428-8187
www.greenturtletech.com

Retroceptor



This series is intended to replace failing steel HGIs. They are made from durable polymers that are guaranteed not to break-down and come with a limited 20-year warranty. The units offer a smaller footprint than traditional steel interceptors. They incorporate non-removable baffles and the cover uses built-in non-removable thumb screws to reduce escaping odors. Only three units (RC35, RC50, RC35LP) are certified to the minimum performance requirements of PDI G101 and CSA B481.1 Type A.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)**	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
RC 25	25	50	-	24	-	-	Interior
RC 35	35	70	70	24	38.6%	6.9''	Interior
RC 50	50	100	100	45	30.6%	4.4''	Interior
RC 25LP	25	50	-	18	-	-	Interior
RC 35LP	35	70	70	18	50.7%	2.8''	Interior

**Data estimated from dimensional calculations

Units are suitable for indoor above floor installations. The cover is not load-rated and prohibits pedestrian traffic. Units are only certified up to 50 GPM, which limits the total number of fixtures that can be connected. Only the RC 35, RC 50 and RC 35LP are certified to the minimum grease capacity of PDI G101, which increases cleaning frequency. When buried, units are not designed for direct flush-with-floor burial and no extensions are offered, requiring the unit to be buried in a vault (by others).

Proceptor UPC/PDI

This series is made from durable FRP and come with a limited 30-year warranty. Units are designed for indoor or outdoor, above or below grade installations with optional AASHTO M306 H20 vehicle traffic rated covers (for more information on cover load design and testing criteria, see Appendix B: Understanding Cover Load-Rating Requirements). Units are all certified to the minimum performance requirements of PDI G101 and CSA B481.1 Type A. Units require a factory fabricated FRP riser (EC2) made to a specified height.

Model	Flow Rate (GPM)	Grease Capacity Claimed (gallons)*	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
GMC-50	50	18	100	50	27.5%	3.0''	Interior
GMC-100	100	42	200	100	27.5%	5.2''	Interior
GMC-150	100	66	200	150	18.4%	5.0''	Interior
GMC-200	100	90	200	200	13.8%	4.8''	Interior
GMC-250	100	119	200	250	11.0%	4.7''	Interior
GMC-300	100	156	200	300	9.2%	4.7''	Interior

**Data estimated from dimensional calculations

The durable FRP construction will ensure longevity in any installation. The maximum flow rate allows for connecting most fixtures from a commercial kitchen. Units are suitable for indoor or outdoor, above or below grade, which provides a lot flexibility for installations. The grease capacity claimed is unsubstantiated, which can and most likely will lead to compliance problems for consumers.

*Grease capacities claimed are in gallons instead of pounds; they are estimated and unsubstantiated. A request for copies of the manufacturer's test reports, which would have been used to corroborate any efficiency or capacity claims made by the manufacturer, was ignored or rejected.

Zurn Industries, Inc.

1801 Pittsburgh Avenue
Erie, PA 16502
Phone: 814-455-0921
www.zurn.com/products/grease-oil-sediment-separation/grease-interceptor

Z1165 Series

This series is made from fabricated steel and is guaranteed to fail. Units from 4 to 50 GPM are certified to the minimum performance requirements of PDI G101 and require a vented external flow control.

Z1170 Series

This series is made from fabricated steel and is guaranteed to fail. Units from 4 to 50 GPM are certified to the minimum performance requirements of PDI G101 and the 20 to 50 GPM units are also certified to ASME A112.14.3 Type A. All units require a vented external flow control.

Z1170-ZS Series

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
Z1170-ZS-100	4	8	8	3	36.7%	2.3"	Interior
Z1170-ZS-200	7	14	14	5	38.6%	2.7"	Interior
Z1170-ZS-300	10	20	20	6	45.9%	3.3"	Interior
Z1170-ZS-400	15	30	30	10	41.3%	3.3"	Interior
Z1170-ZS-500	20	40	40	16	34.4%	3.5"	Interior
Z1170-ZS-600	25	50	50	21	32.8%	3.6"	Interior
Z1170-ZS-700	35	70	70	30	32.1%	4.1"	Interior
Z1170-ZS-800	50	100	100	40	34.4%	5.0"	Interior

**Data estimated from dimensional calculations

The series is offered in fabricated stainless steel (-ZS). Risers must be custom built at the factory. Durable stainless steel construction will ensure longevity in service, but the series only offers flow rates up to 50 GPM, which limits the total number

of fixtures that can be connected. The limited grease capacities will require increased cleaning frequencies for consumers.

Z1171 Series

This series is low profile, made from fabricated steel and is guaranteed to fail. Units from 4 to 50 GPM are certified to the minimum performance requirements of PDI G101 and the 20, 35 and 50 GPM units are also certified to ASME A112.14.3 Type A. All units require a vented external flow control.

Z1171-ZS Series

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
Z1171-ZS-500	20	40	40	15	36.7%	1.9''	Interior
Z1171-ZS-700	35	70	70	30	32.1%	1.8''	Interior
Z1171-ZS-800	50	100	100	40	34.4%	2.9''	Interior

**Data estimated from dimensional calculations

This series is offered in fabricated stainless steel (-ZS). Risers must be custom built at the factory. Durable stainless steel construction will ensure longevity in service, but the series only offers flow rates up to 50 GPM, which limits the total number of fixtures that can be connected. The limited grease capacities will require increased cleaning frequencies for consumers.

Z1171-RD Series

This series is a low profile semi-automatic draw-off type with rigid hard pipe connection on top. They are made from fabricated steel and are guaranteed to fail. They are not offered in stainless steel. They are certified to PDI G101 and require an external vented flow control.

Z1172 Series

This is a "large capacity" series. They are made from fabricated steel and are guaranteed to fail. Only the 75 GPM (-900) and 100 GPM (-1000) are certified to PDI G101 and ASME A112.14.3 Type A, and require a vented external flow control.

Z1172-ZS Series

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
Z1172-ZS-900	75	150	150	65	External	31.8%	Interior
Z1172-ZS-1000	100	200	200	110	External	25.0%	Interior
Z1172-ZS-1100	125	250	-	150	External	-	Interior
Z1172-ZS-1200	150	300	-	195	External	-	Interior
Z1172-ZS-1300	200	400	-	270	External	-	Interior
Z1172-ZS-1400	250	500	-	465	External	-	Interior
Z1172-ZS-1500	300	600	-	665	External	-	Interior
Z1172-ZS-1600	350	700	-	865	External	-	Interior
Z1172-ZS-1700	400	800	-	1095	External	-	Interior
Z1172-ZS-1800	450	900	-	1280	External	-	Interior
Z1172-ZS-1900	500	1000	-	1440	External	-	Interior

**Data estimated from dimensional calculations

This series is offered in fabricated stainless steel (-ZS). Durable stainless steel construction will ensure longevity in service, but only the 75 and 100 GPM units are certified. Their limited grease capacities will require increased cleaning frequencies for consumers.

Z1173 Series

This series is a semi-automatic type with draw-off valve on the end of the unit on the outlet side. They are made from fabricated steel and are guaranteed to fail. They are certified to the minimum performance requirements of PDI G101 and the 20 to 75 GPM units are also certified to ASME A112.14.3 Type A. All units require a vented external flow control.

Z1173-RD Series

This series is semi-automatic draw-off type with rigid hard pipe connection on top. They are made from fabricated steel and are guaranteed to fail. They are certified to PDI G101 and require an external vented flow control.

Z1173-TD Series

This series is semi-automatic draw-off with valve and hose on the top of the unit. They are made from fabricated steel and are guaranteed to fail. They are certified to PDI G101 and require an external vented flow control.

GT2700 Series

This is a light commercial price point series made from lighter gauge fabricated steel. The lighter gauge steel guarantees these units will fail even faster. All units are certified to PDI G101, and the 20 to 50 GPM units are also certified to ASME A112.14.3 Type A. All units require a vented external flow control.

GT-2701 Series

This is a light commercial low profile series made from lighter gauge steel and guaranteed to fail. All units are certified to PDI G101 and ASME A112.14.3 Type A and require a vented external flow control.

GT2702 Series

These are interior HGIs made from durable HDPE suitable for pedestrian traffic only with an upgraded cover. They are rectangular in shape, have bolt on light duty poly covers and require manufacturer-fabricated bolt-on risers for buried installations. These units share a cross-listing certification with Ashland Polytraps to PDI G101. Units require a vented external flow control.

Model	Flow Rate (GPM)	Grease Capacity Claimed (lbs)	Certified Grease Capacity (lbs)	Liquid Holding Capacity (gallons)	Percent of total liquid capacity when full**	Depth of Grease in Inches When Full**	Interior, Exterior, or both
GT2702-04	4	8	8	1.5	73.4%	4.8''	Interior
GT2702-07	7	30	14	4.6	41.9%	2.8''	Interior
GT2702-10	10	38	20	6	45.9%	3.4''	Interior
GT2702-15	15	60	30	10.2	40.5%	3.4''	Interior
GT2702-20	20	88	40	15	36.7%	3.5''	Interior
GT2702-25	25	125	50	20.8	33.1%	3.8''	Interior
GT2702-35	35	151	70	26.1	36.9%	4.6''	Interior
GT2702-50	50	204	100	35.5	38.8%	4.8''	Interior
GT2702-75	75	150	-	61.8	-	-	Interior

**Data estimated from dimensional calculations

This series is only suitable for indoor pedestrian traffic, which requires an upgraded cover. Units are only certified up to 50 GPM, which limits the total number of fixtures that can be connected. Units are only certified to the minimum grease capacity of PDI G101, which increases cleaning frequency. Units require a custom manufacturer-pre-fabricated riser when buried.

Appendix A: Summary of Accelerated Protocol in NSF SE 15741

This test protocol consists of two phases. During phase 1, the minimum allowable capacity for the interceptor is established according to ASME A112.14.3 (2 lbs/gpm). Phase 1 concludes at breakdown or 15 increments, whichever comes first. During phase 2, the increments are accelerated by adding lard directly through the lid in quantities specified by the manufacturer between increments. If the interceptor has not reached breakdown, before the 16th increment the specified amount of melted lard is added through the lid directly into the interceptor. Next, a standard test increment is run using the test sinks and melted lard as proscribed by ASME A112.14.3 (0.2 lbs/gpm). The process is repeated until phase 2 concludes at breakdown or 15 additional increments, whichever comes first.

To date, the only manufacturer to utilize the accelerated protocol in NSF SE 15741 is Endura (formerly Canplas) on their XL75 and XL100 units. For the XL75, Endura elected to add 40 pounds of lard between increments during phase 2 and for the XL100, elected to add 50 pounds between increments. NSF certified the XL75 at 559 lbs of grease with an average efficiency of 98%, and the XL100 at 1058 lbs with an average efficiency of 99%.

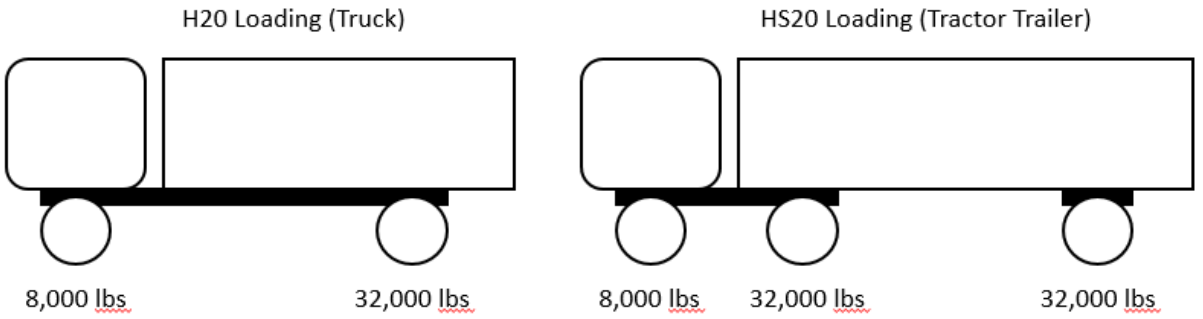
To validate the efficacy of the accelerated protocol in SE 15741, on its own volition, NSF conducted a standard conforming test to ASME A112.14.3 Type A on the Endura XL75. The validation test confirmed that the XL75 separated 649 lbs of lard with an average efficiency of 96%. Thus, the accelerated protocol understated the grease capacity by 14% (559 vs. 649 lbs), while overstating the average efficiency by only two (2) percentage points (98 vs. 96%). The validation test supports a conclusion that these units will perform at least as well as the accelerated protocol predicts within a satisfactory margin of error.

While the test results of NSF SE 15741 support acceptance of the certification, the fact remains that this standard is not approved under any of the national model plumbing codes, nor under any state, municipal or local plumbing codes.

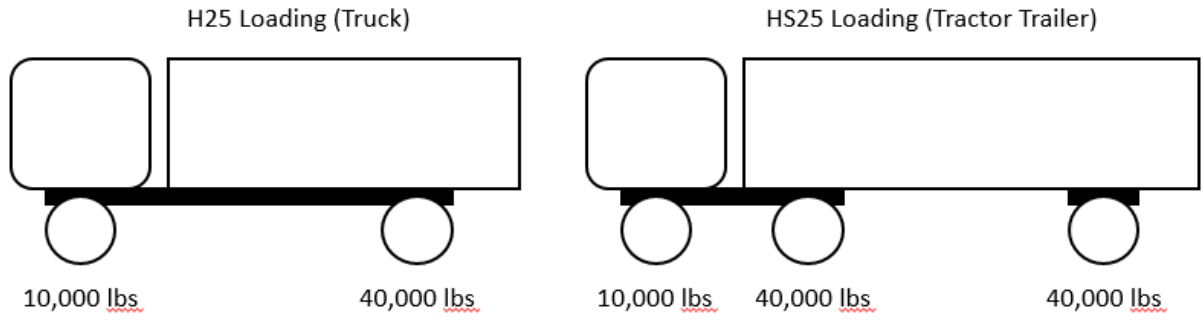
Appendix B: Understanding Cover Load-Ratings

The American Association of State Highway and Transportation Officials (AASHTO) is a standards' setting body which publishes specifications, test protocols and guidelines which are used in highway design and construction throughout the United States. Among other things, AASHTO publishes the *Standard Specification for Highway Bridges*, which addresses load bearing requirements for manhole covers. AASHTO has established the following categories for weight limits for regular vehicular traffic:

H20/HS20 = 32,000-lb axle, 16,000-lb wheel load



H25/HS25 = 40,000-lb axle, 20,000-lb wheel load



Covers designed to meet the basic requirements for these loads need only test the covers with a proof load to meet these minimums. If a specification requires H20/HS20 loading it simply requires a cover meet the design load of 16,000 pounds per wheel, without a safety factor.

The General Services Administration Specification RR-F-621, was the first widespread specification put out by the federal government that directly addressed the performance of construction castings. It required a casting maintain a 25,000-lb load in the center of the casting by a 9-inch by 9-inch pad. This specification has been renamed Commercial Item Description (CID) A-A-60005. There is no direct correlation between this proof test and the H20 design load.

AASHTO M306, first published in 1989 and totally revamped in 2005, requires castings have a 2-1/2 times safety factor in a proof load test. For H20/HS20 loads the casting must maintain 40,000-lb proof load in the center of the casting by a 9-inch by 9-inch pad, providing a 2-1/2 times safety factor over the design load of 16,000 pounds. For H25/HS25, the casting must maintain a 50,000-lb proof load in the center of the casting by a 9-inch by 9-inch pad, providing a 2-1/2 times safety factor over the design load of 20,000 pounds. The test duration is for one minute. The cover will fail the test if there are any cracks or if there is a permanent deflection of more than 1/8 inch (3.2 mm).

A specification with a specific load requirement for the cover does not mean that the product provided will have been tested with a safety factor over the specified load. It doesn't mean that the cover provided has not been tested to a proof load that meets the required loading of the specification, it simply means that the product may not have been tested with a safety factor.

For jurisdictions or specifiers that want to ensure that a casting or cover has been tested to a minimum 2-1/2 times safety factor over a specific load requirement, simply include a requirement for AASHTO M306 proof load with the specific load requirement desired. For example, "Cover's must meet AASHTO M306 H20/HS20 Traffic Rating."

Alternatively, the Canadian standard that governs grease interceptors, CSA B481, contains specific load ratings and test methods for covers under B481.0 section 6.1. Grease interceptor covers and top rims are to be rated in accordance with the following table:

Table 1
Load Classification

Load Classification	Safe Live Load, kg (lb)	Platen diameter, mm (in)	Minimum test load at failure, kg (lb)
No load rating (NR)	0	N/A	0
Light duty (L): foot traffic	135 (300)	90 (3.5)	270 (600)
Medium duty (M): light vehicular traffic (e.g. cars)	900 (2000)	150 (5.9)	1800 (4000)
Heavy duty (H): light trucks	2250 (5000)	150 (5.9)	4500 (10 000)
Extra heavy duty (X) heavy trucks	3375 (7500)	250 (9.8)	6750 (15 000)
Special duty (S):	4500 (10 000)	250 (9.8)	9000 (20 000)

Note: *For example, to be classified heavy duty, a cover must fail above 4500 kg (10 000 lb) so that its safe live load is above 2250 kg (5000 lb).*

A platen is a flat plate upon which pressure may be applied. For covers intended to be installed indoors only, the loading test must be at room temperature (20 ^{o}C ± 5^{o}) (68 ^{o}F ± 9^{o}). For outdoor installations, covers must be tested at both the minimum and maximum ambient air temperatures (as specified by the manufacturer). Covers are then tested to failure and their load rating assigned based on dividing the load at failure by two. For example, if a cover/rim fails at 3,000 kg (6,600 lb), then its maximum safe live load is 1,500 kg (3,300 lb) and it will be rated medium duty since the next smaller safe live load listed in Table 1 is 900 kg (2,000 lb) for the medium duty classification. This provides a minimum two-times safety factor for the safe live load, instead of two and one-half, which is required in AASHTO M306.

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