Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344
www.dli.mn.gov

Plumbing Board
Request for Interpretation

PRINT IN INK or TYPE

NAME OF SUBMITTER	Rule(s) to be interpreted (e.g., 4714.0330)
Gonzalo Lagos	Product Certification Dates and Test Reports

The Minnesota Plumbing Code (MN Rules, Chapter 4714) is available at www.dli.mn.gov/CCLD/PlumbingCode.asp

Has a request for interpretation been submitted to Department of Labor and Industry (DLI) staff, either as a verbal request or a written request? ■ Yes ☐ No

If "No," contact DLI staff at 651-284-5898. The DLI is responsible for administration and interpretation of the Minnesota Plumbing Code, and all requests must be processed and provided a DLI interpretation before being referred to the Plumbing Board. This form is intended to be used to request an interpretation from the Plumbing Board only as a resolution of dispute with DLI interpretation.

Code/Rule to be interpreted:	Name of DLI employee gave interpretation:	Date interpretation originally requested:
ASME A112.14.3 along with Chapter 10		

Provide a copy of the DLI interpretation with this request (a copy must be provided as reference).

Is there a local dispute with an Inspector of other official?	If Yes, state the name or type of official
☐ Yes ■ No	

State the circumstances of the initial dispute:

Currently DLI is accessing the IAPMO website for product certification under the ASME A112.14.3 standard for Hydromechanical Interceptors. The website shows Schier Product's listings that are current with the products sold. Schier also has other products that were certified; however, they are no longer listed on the IAPMO website. These products still have valid test reports and have not been delisted by IAPMO. These products should continue to be allowed by DLI.

Explain what you disagree with the interpretation given to you by DLI staff:

More than requesting a change, we are seeking reconfirmation of the acceptance of the following units: **GB1-C, GB2-C, GB3-C, GB-75** (at 75 GPM), **GB-250** (at 200 GPM). Each of the units listed above complies with **Type C** (Flow Control) requirements as outlined in the Minnesota Plumbing Code.

Historically, our hydromechanical grease interceptors have been approved for specification and installation. Through this formal request, we respectfully advocate for the continuation of that approval.

Updated test reports have been attached and include the most recent grease capacity ratings.

What is your interpretation of the language:

If the product has a valid test report and it has not been delisted by IAPMO it should be acceptable by the state.

List any other information you would like the Board to consider:

Test reports (attached).

Information regarding submitting this form:

- Submit any supporting documentation to be considered electronically to DLI.CCLDBOARDS@state.mn.us. Once your Request For Interpretation form has been received, it will be assigned a file number. Please reference this file number on any correspondence and supplemental submissions.

Information for presentation to the Committee:

- You will be notified with the date of the Committee Meeting in which your Request For Interpretation will be heard.
- Limit presentations to 5 minutes or less.
- Be prepared to answer questions regarding the Code, the circumstances that led to the dispute and please bring copies of any documentation.

What you can do if you disagree with the Board's determination:

- You may appeal the Board's determination pursuant to Minn. Stat. Chapter 14.

Submitted by:
Schier Products

NAME		FIRM NAME		
Gonzalo		Lagos		
ADDRESS		CITY	STATE	ZIP CODE
6455 Woodland Drive		Shawnee	KS	66218
PHONE	SIGNATURE (original or electronic)	DATE		
(816) 500-0582		March 3rd, 2026		

Office Use Only

RFI File No.	Date Received by DLI	Dated Received by Board	Date of Board Meeting
PB0228	3/3/2026	4/21/2026	4/21/2026

Title of RFI	By:
PB0228.RFI.Gonzalo Lagos.ASME A112.14.3.Type C	

This material can be made available in different forms, such as large print, Braille or on a tape. To request, call 1-800-342-5354 (DIAL-DLI).

For assistance or questions on completing this form, please call 651-284-5898 or 651-284-5889.

Mailing address:

Plumbing Board
c/o Department of Labor and Industry
443 Lafayette Road North
St. Paul, MN 55155-4344

***** Please remember to attach all necessary explanations and supporting documentation*****

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TEST REPORT

Report Number: **1757-16005-002**

Report Issued: January 15th, 2016

Client: Schier Products
9500 Woodend Rd.
Edwardsville, KS 66111

Project Number: 25702

Contact: Ben Brown

Source of Samples: Samples were manufactured at the client's facility in Edwardsville, KS and witnessed tested by Dale E. Holloway of IAPMO R&T Lab. Samples are manufactured in good condition.

Date of Testing: January 12th, 2016 through January 13th, 2016.

Sample Description: HDPE Grease Interceptor.

Model: **GB-1 (20 gpm)**

Refer to the manufacturer's drawings and installation instructions for more detailed measurements and information.

Scope of Testing: The above grease interceptor was witnessed tested to meet the requirements of ASME A112.14.3-2000 (Reaffirmed 2004) "Grease Interceptors".

Conclusion: **The "GB-1 (20 gpm)" Grease Interceptor DID COMPLY with the requirements of ASME A112.14.3-2000 (Reaffirmed 2004) for "Grease Interceptors".**

By the signature below, I certify that all the testing and preparation for this report was performed under direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness tested and reported by,

Dale E. Holloway, Regional Technical Manager
IAPMO R&T Lab

Primary Standards: ASME A112.14.3-2000 (Reaffirmed 2004)

2 General Requirements
2.1 Design
2.2 Rating
2.3 Inlet and Outlet Connections
2.4 Flow Controls and/or Vents
3 Testing
3.1 Construction of Test Equipment
3.2 Installation of Testing Equipment
3.3 Preliminary Test Procedure
3.4 Skimming Procedure
3.5 Rating Test Procedure
4 Labeling, Installation, and Maint.
4.1 Labeling
4.2 Installation Instructions
4.3 Maintenance Instructions

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

ASME A112.14.3-2000 (Reaffirmed 2004)

2 General Requirements:

2.1 Design: **COMPLIES**
The grease interceptor complies with all the applicable requirements of ASME B1.20.1 and ASTM A888.

2.2 Rating: **COMPLIES**
The unit tested was a "Type C" - Units without an external flow control, directly connected.

The manufacturer's installation instruction's identifies installation parameters consistent with the test parameters.

2.3 Inlet and Outlet Connections: **COMPLIES**
Inlet and Outlet connections - Hubless coupling is compliant with ASTM A888

2.4 Flow Controls and/or Vents: **COMPLIES**

2.4.1 Vents or air intakes were used. There was no flow control

2.4.2 When a flow control and/or vent is used during testing for rating a grease interceptor, the rating of the unit did not exceed the maximum flow through the flow control.

The manufacturer's literature reflected that the rating was achieved with the vent attached, and that the vent was installed with the unit.

3 Testing

3.1 Construction of Test Equipment:

3.1.1 Test Sink: **COMPLIES**

Length - 8 ft. (8 ft)
Width - 2 ft. (2 ft)
Depth - 12.5" (12.5 inches)

Corrosion Resistant Material - stainless steel (yes)

Number of compartments - 2 (2)
Compartment length - 4 (4 ft)

Structurally reinforced - yes (yes)
Supported on legs - yes (yes)
Rim height with legs - 3' (3 ft)
Legs structurally supported - yes (yes)

3.1.1.1 Sink Waste Connections: **COMPLIES**

Each sink compartment was fitted with a 1-½" standard sink waste connection with flange, crossbars, slip joint tailpiece, and locknut.

The waste connections were located on opposite sides of the center partition in the corner formed by the side of the sink and the center partition.

3.1.1.2 Water Level Gauges: **COMPLIES**

Each compartment was equipped with a gauge connection and a water level gauge with gauge glass.

Each gauge connection was fitted into the bottom of a sink compartment and in close proximity to the waste outlet.

Each gauge was mounted on the outside of the sink, adjacent to its respective gauge connection, and extended diagonally upward from the bottom center to the top outside corners.

The gauges were calibrated to read directly the number of inches of water in the sink compartments above the sink waste flange.

3.1.1.3 Movable Sink Partitions: **COMPLIES**

Each compartment of the sink was fitted with a movable partition, making it possible to regulate the size of the compartment to any desired capacity.

3.1.2 Skimming Tank: **COMPLIES**

The skimming tank was rectangular in shape; open at the top and equipped with a stationary baffle located approximately 3 feet from the end of the tank receiving the discharge from the interceptor.

The baffle extended the width of the tank and to within 4 inches of the bottom of the tank.

Tank Length - 8'
Tank Width - 28"
Tank Depth - 32"

Tank was made of corrosion resistant material - yes (yes)
Tank was structurally reinforced - yes (yes)

Waste outlet diameter - 4" (4 inches)
The waste outlet was connected to the bottom of the tank at one end and trapped to retain approximately 26 inches of water in the tank.

The tank provided a 4 inch bottom drain valve to permit draining and cleaning.

3.2 Installation of Testing Equipment:

3.2.1 Direct Connection Test Types A, B, and C:
Findings- The "GB-1 (20 gpm)" was a Type C unit.

3.2.1.1 Waste Piping: **COMPLIES**

The combined horizontal waste, vertical waste riser, interceptor inlet, and discharge piping shall; be 2 inches for test flows of 50 gpm or less and 3 inches for test flows over 50 gpm.
Findings - Test flow was 20 gpm. Pipe size was 2 inches.

3.2.1.2 Sink and Interceptor Locations: **COMPLIES**

The sink was located with the sink rim 13 feet above the outside bottom of the grease interceptor being tested.

3.2.1.3 Skimming Tank Location: **COMPLIES**

The skimming tank was located low enough, with respect to the interceptor, for the discharge piping from the interceptor to clear the tank rim by not less than 3 inches.

3.2.1.4 Installation of Waste Piping: **COMPLIES**

(a) *Sink Connections*- The sink outlet waste connection from each sink compartment was 1-½ inches in size and each connection was fitted with a quick-opening gate valve.

(b) *Combined Horizontal Waste Piping*- The combined horizontal waste piping into which the sink outlets connect were installed with the center line 11 inches below the bottom of the sink and properly hung and braced from the sink reinforcement and supports.
The waste pipe was fitted to the inlet of a flow control and vent.

(c) *Flow Control and/or Vent Device (Optional)*- The flow control and device was adequate in size for the interceptor to be tested and was equipped with the proper size orifice and/or other details to provide the proposed flow rate of the subject interceptor. The waste piping on either side of the flow control and vent was fitted with unions to permit removal of the device.

(d) *Vertical Waste Riser*- The vertical waste riser was connected to the outlet of the flow control and vent device and extended downward to connect to the grease interceptor inlet by means of an elbow and a short horizontal nipple.

(e) *Interceptor Discharge*- The discharge pipe from the interceptor outlet to the skimming tank had a minimum pitch of 1/8 inch per foot and was provided with a 2 inch vent properly located to prevent siphoning of the interceptor.

(f) *Interceptor Connections*- When inlet and outlet openings of the interceptor exceed 2 inches or 3 inches for test flows exceeding 50 gpm, reducing couplings were used to permit connections of the 2 inch or 3 inch.

3.2.2 Indirect Connection Test Type D: **NOT APPLICABLE**

3.3 Preliminary Test Procedure:

3.3.1 Media Analysis: **COMPLIES**
pH of water - 6.4 (6.0 to 8.0)
Specific Gravity of Lard - 0.875 at 150°F (0.875 ± 0.005 at 150°F)

3.3.2 Establishing Sink Compartment Capacity: **COMPLIES**
Capacity of compartment 1- 24 gallons (1.2 x flow rate of interceptor)
Capacity of compartment 2- 24 gallons (1.2 x flow rate of interceptor)

3.3.3 Establishing Vol. of Incremental Discharge: (based on 10" water above sink outlet): **COMPLIES**
Compartment 1 Discharge - 20 gallons (equal to flow rate of interceptor)
Compartment 2 Discharge - 20 gallons (equal to flow rate of interceptor)

3.3.4 Computation of Flow Rate: **FOLLOWED**
The flow rate from the sink was computed by timing the rate of drainage of the first 9 ½" of water from the sink compartment, measured from the 10" mark to the datum line ½" above the sink outlet flange.

3.3.4.1 Check Flow Rate Tests: **COMPLIES**

Test number	Compartment	Time (sec)	gpm	Based on Time
1	1	71	16.1	-
2	1	85	13.4	-
3	1	71	16.1	-
			Avg: 15.2	
1	2	68	16.8	-
2	2	64	17.8	-
3	2	73	15.6	-
			Avg: 16.7	
1	1 & 2 simultaneous	112	20.4	Compartment 1
2	1 & 2 simultaneous	112	20.4	Compartment 1
3	1 & 2 simultaneous	112	20.4	Compartment 1
			Avg: 20.4	
1	1 & 2 simultaneous	112	20.4	Compartment 2
2	1 & 2 simultaneous	113	20.2	Compartment 2
3	1 & 2 simultaneous	112	20.4	Compartment 2
			Avg: 20.3	

For all of the above flow rates, the time for total discharge did not exceed 126 seconds.

3.3.4.2 Calibrated Drainage Flow Rates: **COMPLIES**
Proposed flow rate of Interceptor being tested - 20 gpm.
The average of the above calibrated flow rates for simultaneous discharge was equal and didn't exceed by not more than 5% the proposed flow rated of the interceptor being tested.
Findings - 20.4 gpm average (21 gpm max.)

3.4 Skimming Procedure: **FOLLOWED**
The skimming procedure was initiated 5 minutes after the increment to be skimmed has discharged into the tank. The baffles were used alternately until the amounts of grease collected in the procedure are less than 1% by visual observation. Upon completion of the skimming procedure, water shall be drained from the bottom of the pail by means of a spigot. The remainder of the water was collected as describe in the procedure until only a few drops are observed. The lard is then weighed to the nearest ½ gram.

3.5 Rating Test Procedure :
See Table 1 of test report for Rating Testing.

3.5.1 Test Media: **FOLLOWED**
Certification tests were conducted with fresh, unused lard and water as defined and both within a temperature range from 150°F to 160°F.

3.5.2 Ratio of Lard to Water: **FOLLOWED**
The test lard was introduced into one compartment, during each incremental discharge, in the ratio of 1 lb. of lard for each 5 gallons of water in that compartment. Consequently, the proportion of lard to the total amount of water discharged from both sink compartments during each increment was 1 lb. for each 10 gallons respectively. The required amount of test lard, within the above temperature range, was weighed out and poured into the test compartment of the sink.
Findings- 4 lbs per increment used.

3.5.3 Test Increments: **FOLLOWED**

3.5.3.1 Each test increment consisted of the simultaneous discharge of water from both sink compartments and the lard from the test compartment.

3.5.3.2 During the first test increment, the lard was poured into compartment 1 while compartment 2 discharged clear water. During the second test increment the lard was poured into compartment 2 while the water in compartment 1 remained clear.

3.5.4 Flow Rates: **FOLLOWED**
The drainage period for each increment was gauged and timed on the basis of the flow from the compartment containing the clear water. The flow rate from the sink was computed and recorded for each increment. (See Table 1 of test report).

3.5.5 Efficiency Determinations: **FOLLOWED**
The grease was removed from the skimming tank and the efficiency of the interceptor was computed at intervals of five increments or less until the average efficiency reached 93% or less and/or the incremental efficiency reached 85% or less (See Table 1 of test report).

3.5.6 Duration of the Test: **FOLLOWED**
The testing was continued until the average efficiency reached 85% or less and/or the incremental efficiency reached 75% or less.

3.5.7 Determination of Grease Retention Capacity: **FOLLOWED**
Maximum grease retention capacity was 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 %.

3.5.8 Performance Requirements for Rating: **COMPLIES**

The interceptor did conform with or exceeded the following requirements at the breakdown point:

(a) Had an average efficiency of 90% or more.

Findings – 97.3 %

(b) Had an incremental efficiency of 80% or more.

Findings – 91.0 %

(c) Had retained not less than 2 lbs of grease for each 1 gpm average flow rate as determined during the testing.

Findings – 70.04 lbs.

3.5.9 Rated Capacities: **COMPLIES**

Standard rating flow rate and grease retention capacities for grease interceptors were tested in accordance with the above test procedure and did conform with the requirement of ASME A112.14.3-2000.

Findings- Flow Rate 20 gpm

Grease Retention Capacity Rating - 40 lbs.

4 Labeling, Installation, and Maintenance

4.1 Labeling: **COMPLIES**

Products were labeled with the following information:

(a) Manufacturer's name - Schier Products (yes)
(b) Model number - yes (yes)
(c) Rated flow(s) - yes (yes)
(d) "Inlet" and "Outlet" - yes (yes)
(e) ASME A112.14.3 - yes (yes)
(f) Product type by rating - yes (yes)
(g) Efficiency at the rated capacity - yes (yes)

4.2 Installation Instructions: **COMPLIES**

The grease interceptor was provided with complete installation instructions, including but not limited to the following:

(a) Flow control and/or vent requirements - NA (yes)
(b) Separate trapping requirements - yes (yes)
(c) Elevation and accessibility requirements - yes (yes)
(d) Safety and health-related instructions - yes (yes)
(e) Cleanout locations - yes (yes)
(f) Instructions that show the clearances required for maintenance, cleaning, and hazard prevention - yes (yes)
(g) Cautions against installation in any manner except as tested and rated - yes (yes)

4.3 Maintenance Instructions: **COMPLIES**

Units were provided with complete maintenance instructions including but not limited to the following:

(a) Maintenance Instructions - yes (yes)
(b) Safety and health provisions - yes (yes)

Each grease interceptor was provided with service instructions which included a trouble-shooting guide as well as instructions for performing necessary servicing or for obtaining servicing.

Pictures

GB-1 (20 gpm)

TABLE 1 – Test Results per ASME A112.14.3-2000 (Reaffirmed 2004)

" GB-1 (20 gpm) " Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
1	1	2	113	20.2	4				4			
2	2	1	112	20.4	4				8			
3	1	2	112	20.4	4				12			
4	2	1	112	20.4	4	0.15	15.85	99.1	16	0.15	15.85	99.1
5	1	2	113	20.2	4				20			
6	2	1	112	20.4	4				24			
7	1	2	113	20.2	4				28			
8	2	1	112	20.4	4	0.20	15.80	98.8	32	0.35	31.65	98.9
9	1	2	113	20.2	4				36			
10	2	1	112	20.4	4				40			
11	1	2	113	20.2	4				44			
12	2	1	111	20.5	4	0.33	15.67	97.9	48	0.68	47.32	98.6
13	1	2	113	20.2	4				52			
14	2	1	111	20.5	4				56			
15	1	2	113	20.2	4				60			
16	2	1	113	20.2	4	0.56	15.44	96.5	64	1.24	62.76	98.1
17	1	2	113	20.2	4				68			
18	2	1	112	20.4	4	0.72	7.28	91.0	72	1.96	70.04	97.3
19	1	2	113	20.2	4	0.88	3.12	78.0	76	2.84	73.16	96.2
20	2	1	112	20.4	4	1.25	2.75	68.8	80	4.09	75.91	94.9
21	1	2										
22	2	1										
23	1	2										
24	2	1										
25	1	2										
26	2	1										
27	1	2										
28	2	1										

Performance Requirement Rating

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TEST REPORT

Report Number: **1757-16007-002**

Report Issued: January 15th, 2016

Client: Schier Products
9500 Woodend Rd.
Edwardsville, KS 66111

Project Number: 25702

Contact: Ben Brown

Source of Samples: Samples were manufactured at the client's facility in Edwardsville, KS and witnessed tested by Dale E. Holloway of IAPMO R&T Lab. Samples are manufactured in good condition.

Date of Testing: January 12th, 2016 through January 13th, 2016.

Sample Description: HDPE Grease Interceptor.

Model: **GB-2 (35 gpm)**

Refer to the manufacturer's drawings and installation instructions for more detailed measurements and information.

Scope of Testing: The above grease interceptor was witnessed tested to meet the requirements of ASME A112.14.3-2000 (Reaffirmed 2004) "Grease Interceptors".

Conclusion: **The "GB-2 (35 gpm)" Grease Interceptor DID COMPLY with the requirements of ASME A112.14.3-2000 (Reaffirmed 2004) for "Grease Interceptors".**

By the signature below, I certify that all the testing and preparation for this report was performed under direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness tested and reported by,

Dale E. Holloway, Regional Technical Manager
IAPMO R&T Lab

Primary Standards: ASME A112.14.3-2000 (Reaffirmed 2004)

2 General Requirements
2.1 Design
2.2 Rating
2.3 Inlet and Outlet Connections
2.4 Flow Controls and/or Vents
3 Testing
3.1 Construction of Test Equipment
3.2 Installation of Testing Equipment
3.3 Preliminary Test Procedure
3.4 Skimming Procedure
3.5 Rating Test Procedure
4 Labeling, Installation, and Maint.
4.1 Labeling
4.2 Installation Instructions
4.3 Maintenance Instructions

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

ASME A112.14.3-2000 (Reaffirmed 2004)

2 General Requirements:

2.1 Design: **COMPLIES**
The grease interceptor complies with all the applicable requirements of ASME B1.20.1 and ASTM A888.

2.2 Rating: **COMPLIES**
The unit tested was a "Type C" - Units without an external flow control, directly connected.

The manufacturer's installation instruction's identifies installation parameters consistent with the test parameters.

2.3 Inlet and Outlet Connections: **COMPLIES**
Inlet and Outlet connections - Hubless coupling is compliant with ASTM A888

2.4 Flow Controls and/or Vents: **COMPLIES**

2.4.1 Vents or air intakes were used. There was no flow control

2.4.2 When a flow control and/or vent is used during testing for rating a grease interceptor, the rating of the unit did not exceed the maximum flow through the flow control.

The manufacturer's literature reflected that the rating was achieved with the vent attached, and that the vent was installed with the unit.

3 Testing

3.1 Construction of Test Equipment:

3.1.1 Test Sink: **COMPLIES**
Length - 8 ft. (8 ft)
Width - 2 ft. (2 ft)
Depth - 12.5" (12.5 inches)

Corrosion Resistant Material - stainless steel (yes)

Number of compartments - 2 (2)
Compartment length - 4 (4 ft)

Structurally reinforced - yes (yes)
Supported on legs - yes (yes)
Rim height with legs - 3' (3 ft)
Legs structurally supported - yes (yes)

3.1.1.1 Sink Waste Connections: **COMPLIES**
Each sink compartment was fitted with a 1-½" standard sink waste connection with flange, crossbars, slip joint tailpiece, and locknut.

The waste connections were located on opposite sides of the center partition in the corner formed by the side of the sink and the center partition.

3.1.1.2 Water Level Gauges: **COMPLIES**
Each compartment was equipped with a gauge connection and a water level gauge with gauge glass.

Each gauge connection was fitted into the bottom of a sink compartment and in close proximity to the waste outlet.

Each gauge was mounted on the outside of the sink, adjacent to its respective gauge connection, and extended diagonally upward from the bottom center to the top outside corners.

The gauges were calibrated to read directly the number of inches of water in the sink compartments above the sink waste flange.

3.1.1.3 Movable Sink Partitions: **COMPLIES**
Each compartment of the sink was fitted with a movable partition, making it possible to regulate the size of the compartment to any desired capacity.

3.1.2 Skimming Tank: **COMPLIES**

The skimming tank was rectangular in shape; open at the top and equipped with a stationary baffle located approximately 3 feet from the end of the tank receiving the discharge from the interceptor.

The baffle extended the width of the tank and to within 4 inches of the bottom of the tank.

Tank Length - 8'
Tank Width - 28"
Tank Depth - 32"

Tank was made of corrosion resistant material - yes (yes)
Tank was structurally reinforced - yes (yes)

Waste outlet diameter - 4" (4 inches)
The waste outlet was connected to the bottom of the tank at one end and trapped to retain approximately 26 inches of water in the tank.

The tank provided a 4 inch bottom drain valve to permit draining and cleaning.

3.2 Installation of Testing Equipment:

3.2.1 Direct Connection Test Types A, B, and C:
Findings- The "GB-2 (35 gpm)" was a Type C unit.

3.2.1.1 Waste Piping: **COMPLIES**

The combined horizontal waste, vertical waste riser, interceptor inlet, and discharge piping shall; be 2 inches for test flows of 50 gpm or less and 3 inches for test flows over 50 gpm.
Findings - Test flow was 35 gpm. Pipe size was 2 inches.

3.2.1.2 Sink and Interceptor Locations: **COMPLIES**

The sink was located with the sink rim 13 feet above the outside bottom of the grease interceptor being tested.

3.2.1.3 Skimming Tank Location: **COMPLIES**

The skimming tank was located low enough, with respect to the interceptor, for the discharge piping from the interceptor to clear the tank rim by not less than 3 inches.

3.2.1.4 Installation of Waste Piping: **COMPLIES**

(a) *Sink Connections*- The sink outlet waste connection from each sink compartment was 1-½ inches in size and each connection was fitted with a quick-opening gate valve.

(b) *Combined Horizontal Waste Piping*- The combined horizontal waste piping into which the sink outlets connect were installed with the center line 11 inches below the bottom of the sink and properly hung and braced from the sink reinforcement and supports.
The waste pipe was fitted to the inlet of a flow control and vent.

(c) *Flow Control and/or Vent Device (Optional)*- The flow control and device was adequate in size for the interceptor to be tested and was equipped with the proper size orifice and/or other details to provide the proposed flow rate of the subject interceptor. The waste piping on either side of the flow control and vent was fitted with unions to permit removal of the device.

(d) *Vertical Waste Riser*- The vertical waste riser was connected to the outlet of the flow control and vent device and extended downward to connect to the grease interceptor inlet by means of an elbow and a short horizontal nipple.

(e) *Interceptor Discharge*- The discharge pipe from the interceptor outlet to the skimming tank had a minimum pitch of 1/8 inch per foot and was provided with a 2 inch vent properly located to prevent siphoning of the interceptor.

(f) *Interceptor Connections*- When inlet and outlet openings of the interceptor exceed 2 inches or 3 inches for test flows exceeding 50 gpm, reducing couplings were used to permit connections of the 2 inch or 3 inch.

3.2.2 Indirect Connection Test Type D: **NOT APPLICABLE**

3.3 Preliminary Test Procedure:

3.3.1 Media Analysis: **COMPLIES**
pH of water - 6.4 (6.0 to 8.0)
Specific Gravity of Lard - 0.875 at 150°F (0.875 ± 0.005 at 150°F)

3.3.2 Establishing Sink Compartment Capacity: **COMPLIES**
Capacity of compartment 1- 42 gallons (1.2 x flow rate of interceptor)
Capacity of compartment 2- 42 gallons (1.2 x flow rate of interceptor)

3.3.3 Establishing Vol. of Incremental Discharge: (based on 10" water above sink outlet): **COMPLIES**
Compartment 1 Discharge - 35 gallons (equal to flow rate of interceptor)
Compartment 2 Discharge - 35 gallons (equal to flow rate of interceptor)

3.3.4 Computation of Flow Rate: **FOLLOWED**
The flow rate from the sink was computed by timing the rate of drainage of the first 9 ½" of water from the sink compartment, measured from the 10" mark to the datum line ½" above the sink outlet flange.

3.3.4.1 Check Flow Rate Tests: **COMPLIES**

Test number	Compartment	Time (sec)	gpm	Based on Time
1	1	61	32.7	-
2	1	60	33.3	-
3	1	60	33.3	-
			Avg: 33.1	
1	2	60	33.3	-
2	2	58	34.4	-
3	2	57	35.0	-
			Avg: 34.2	
1	1 & 2 simultaneous	110	36.2	Compartment 1
2	1 & 2 simultaneous	111	35.9	Compartment 1
3	1 & 2 simultaneous	111	35.9	Compartment 1
			Avg: 36.0	
1	1 & 2 simultaneous	111	35.9	Compartment 2
2	1 & 2 simultaneous	111	35.9	Compartment 2
3	1 & 2 simultaneous	111	35.9	Compartment 2
			Avg: 35.9	

For all of the above flow rates, the time for total discharge did not exceed 126 seconds.

3.3.4.2 Calibrated Drainage Flow Rates: **COMPLIES**
Proposed flow rate of Interceptor being tested -___35____ gpm.
The average of the above calibrated flow rates for simultaneous discharge was equal and didn't exceed by not more than 5% the proposed flow rated of the interceptor being tested.
Findings - ____36.0 gpm average (36.75 gpm max.)

3.4 Skimming Procedure: **FOLLOWED**
The skimming procedure was initiated 5 minutes after the increment to be skimmed has discharged into the tank. The baffles were used alternately until the amounts of grease collected in the procedure are less than 1% by visual observation. Upon completion of the skimming procedure, water shall be drained from the bottom of the pail by means of a spigot. The remainder of the water was collected as describe in the procedure until only a few drops are observed. The lard is then weighed to the nearest ½ gram.

3.5 Rating Test Procedure :
See Table 1 of test report for Rating Testing.

3.5.1 Test Media: **FOLLOWED**
Certification tests were conducted with fresh, unused lard and water as defined and both within a temperature range from 150°F to 160°F.

3.5.2 Ratio of Lard to Water: **FOLLOWED**
The test lard was introduced into one compartment, during each incremental discharge, in the ratio of 1 lb. of lard for each 5 gallons of water in that compartment. Consequently, the proportion of lard to the total amount of water discharged from both sink compartments during each increment was 1 lb. for each 10 gallons respectively. The required amount of test lard, within the above temperature range, was weighed out and poured into the test compartment of the sink.
Findings- 7 lbs per increment used.

3.5.3 Test Increments: **FOLLOWED**

3.5.3.1 Each test increment consisted of the simultaneous discharge of water from both sink compartments and the lard from the test compartment.

3.5.3.2 During the first test increment, the lard was poured into compartment 1 while compartment 2 discharged clear water. During the second test increment the lard was poured into compartment 2 while the water in compartment 1 remained clear.

3.5.4 Flow Rates: **FOLLOWED**
The drainage period for each increment was gauged and timed on the basis of the flow from the compartment containing the clear water. The flow rate from the sink was computed and recorded for each increment. (See Table 1 of test report).

3.5.5 Efficiency Determinations: **FOLLOWED**
The grease was removed from the skimming tank and the efficiency of the interceptor was computed at intervals of five increments or less until the average efficiency reached 93% or less and/or the incremental efficiency reached 85% or less (See Table 1 of test report).

3.5.6 Duration of the Test: **FOLLOWED**
The testing was continued until the average efficiency reached 85% or less and/or the incremental efficiency reached 75% or less.

3.5.7 Determination of Grease Retention Capacity: **FOLLOWED**
Maximum grease retention capacity was 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 %.

3.5.8 Performance Requirements for Rating: **COMPLIES**

The interceptor did conform with or exceeded the following requirements at the breakdown point:

(a) Had an average efficiency of 90% or more.

Findings – 93.3 %

(b) Had an incremental efficiency of 80% or more.

Findings – 89.6 %

(c) Had retained not less than 2 lbs of grease for each 1 gpm average flow rate as determined during the testing.

Findings – 130.55 lbs.

3.5.9 Rated Capacities: **COMPLIES**

Standard rating flow rate and grease retention capacities for grease interceptors were tested in accordance with the above test procedure and did conform with the requirement of ASME A112.14.3-2000.

Findings- Flow Rate 35 gpm

Grease Retention Capacity Rating - 70 lbs.

4 Labeling, Installation, and Maintenance

4.1 Labeling: **COMPLIES**

Products were labeled with the following information:

(a) Manufacturer's name - Schier Products (yes)
(b) Model number - yes (yes)
(c) Rated flow(s) - yes (yes)
(d) "Inlet" and "Outlet" - yes (yes)
(e) ASME A112.14.3 - yes (yes)
(f) Product type by rating - yes (yes)
(g) Efficiency at the rated capacity - yes (yes)

4.2 Installation Instructions: **COMPLIES**

The grease interceptor was provided with complete installation instructions, including but not limited to the following:

(a) Flow control and/or vent requirements - NA (yes)
(b) Separate trapping requirements - yes (yes)
(c) Elevation and accessibility requirements - yes (yes)
(d) Safety and health-related instructions - yes (yes)
(e) Cleanout locations - yes (yes)
(f) Instructions that show the clearances required for maintenance, cleaning, and hazard prevention - yes (yes)
(g) Cautions against installation in any manner except as tested and rated - yes (yes)

4.3 Maintenance Instructions: **COMPLIES**

Units were provided with complete maintenance instructions including but not limited to the following:

(a) Maintenance Instructions - yes (yes)
(b) Safety and health provisions - yes (yes)

Each grease interceptor was provided with service instructions which included a trouble-shooting guide as well as instructions for performing necessary servicing or for obtaining servicing.

Pictures

GB-2 (35 gpm)

TABLE 1 – Test Results per ASME A112.14.3-2000 (Reaffirmed 2004)

" GB-2 (35 gpm) " Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
1	1	2	112	35.6	7				7			
2	2	1	110	36.3	7				14			
3	1	2	112	35.6	7				21			
4	2	1	111	35.9	7	0.90	27.1	96.8	28	0.90	27.1	96.8
5	1	2	113	35.3	7				35			
6	2	1	111	35.9	7				42			
7	1	2	113	35.3	7				49			
8	2	1	111	35.9	7	1.48	26.52	94.7	56	2.38	53.62	95.8
9	1	2	113	35.3	7				63			
10	2	1	110	36.3	7				70			
11	1	2	113	35.3	7				77			
12	2	1	111	35.9	7	1.78	26.22	93.6	84	4.16	79.84	95.0
13	1	2	113	35.3	7				91			
14	2	1	111	35.9	7	1.17	12.83	91.6	98	5.33	92.67	94.6
15	1	2	113	35.3	7				105			
16	2	1	110	36.3	7	1.06	12.94	92.4	112	6.39	105.61	94.3
17	1	2	113	35.3	7	0.83	6.17	88.1	119	7.22	111.78	93.9
18	2	1	110	36.3	7	0.41	6.59	94.1	126	7.63	118.37	93.9
19	1	2	113	35.3	7	1.09	5.91	84.4	133	8.72	124.28	93.4
20	2	1	110	36.3	7	0.73	6.27	89.6	140	9.45	130.55	93.3
21	1	2	113	35.3	7	1.63	5.37	76.7	147	11.08	135.92	92.5
22	2	1	111	35.9	7	6.21	0.79	11.3	154	17.29	136.71	88.8
23	1	2										
24	2	1										
25	1	2										
26	2	1										
27	1	2										
28	2	1										

Performance Requirement Rating

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TEST REPORT

Report Number: **1757-16011** **Project Number:** 26766

Report Issued: June 15th, 2016

Client: Schier Products
9500 Woodend Rd.
Edwardsville, KS 66111 **Contact:** Todd Uhlenhake

Source of Samples: Samples were manufactured at the client's facility in Edwardsville, KS. The sample was witnessed tested by Dale E. Holloway of IAPMO R&T Lab on 7/13/16. Samples are manufactured in good condition.

Date of Testing: July 13th, 2016 through July 14th, 2016.

Sample Description: HDPE Grease Interceptor.

Model: **GB-3 (50 gpm)**

Refer to the manufacturer's drawings and installation instructions for more detailed measurements and information.

Scope of Testing: The above grease interceptor was witnessed tested to meet the requirements of ASME A112.14.3-2000 (Reaffirmed 2004) "Grease Interceptors", and CSA B481.1-12 "Testing and rating of grease interceptors using lard".

Conclusion: **The "GB-3 (50 gpm)" Grease Interceptor DID COMPLY with the requirements of ASME A112.14.3-2000 (Reaffirmed 2004) for "Grease Interceptors" and CSA B481.1-12 "Testing and rating of grease interceptors using lard".**

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By the signature below, I certify that all the testing and preparation for this report was performed under direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness tested and reported by,

Dale E Holloway

Dale E. Holloway, Regional Technical Manager
IAPMO R&T Lab

Primary Standards: ASME A112.14.3-2000 (Reaffirmed 2004)

2 General Requirements
2.1 Design
2.2 Rating
2.3 Inlet and Outlet Connections
2.4 Flow Controls and/or Vents
3 Testing
3.1 Construction of Test Equipment
3.2 Installation of Testing Equipment
3.3 Preliminary Test Procedure
3.4 Skimming Procedure
3.5 Rating Test Procedure
4 Labeling, Installation, and Maint.
4.1 Labeling
4.2 Installation Instructions
4.3 Maintenance Instructions

CSA B481.1-12

5 Test Method (Testing is covered under ASME A112.14.3 below)

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

ASME A112.14.3-2000 (Reaffirmed 2004) (also covers CSA B481.1-12)

2 General Requirements:

2.1 Design: **COMPLIES**
The grease interceptor complies with all the applicable requirements of ASME B1.20.1 and ASTM A888.

2.2 Rating: **COMPLIES**
The unit tested was a "Type C" - Units without an external flow control, directly connected.

The manufacturer's installation instruction's identifies installation parameters consistent with the test parameters.

2.3 Inlet and Outlet Connections: **COMPLIES**
Inlet and Outlet connections - Hubless coupling is compliant with ASTM A888

2.4 Flow Controls and/or Vents: **COMPLIES**

2.4.1 Vents or air intakes were used. There was no flow control.

2.4.2 When a flow control and/or vent is used during testing for rating a grease interceptor, the rating of the unit did not exceed the maximum flow through the flow control.

The manufacturer's literature reflected that the rating was achieved with the vent attached, and that the vent was installed with the unit.

3 Testing

3.1 Construction of Test Equipment:

3.1.1 Test Sink: **COMPLIES**
Length - 8 ft. (8 ft)
Width - 2 ft. (2 ft)
Depth - 12.5" (12.5 inches)

Corrosion Resistant Material - stainless steel (yes)

Number of compartments - 2 (2)
Compartment length - 4 (4 ft)

Structurally reinforced - yes (yes)
Supported on legs - yes (yes)
Rim height with legs - 3' (3 ft)
Legs structurally supported - yes (yes)

3.1.1.1 Sink Waste Connections: **COMPLIES**
Each sink compartment was fitted with a 1-½" standard sink waste connection with flange, crossbars, slip joint tailpiece, and locknut.

The waste connections were located on opposite sides of the center partition in the corner formed by the side of the sink and the center partition.

3.1.1.2 Water Level Gauges: **COMPLIES**
Each compartment was equipped with a gauge connection and a water level gauge with gauge glass.

Each gauge connection was fitted into the bottom of a sink compartment and in close proximity to the waste outlet.

Each gauge was mounted on the outside of the sink, adjacent to its respective gauge connection, and extended diagonally upward from the bottom center to the top outside corners.

The gauges were calibrated to read directly the number of inches of water in the sink compartments above the sink waste flange.

3.1.1.3 Movable Sink Partitions: **COMPLIES**
Each compartment of the sink was fitted with a movable partition, making it possible to regulate the size of the compartment to any desired capacity.

3.1.2 Skimming Tank: **COMPLIES**
The skimming tank was rectangular in shape; open at the top and equipped with a stationary baffle located approximately 3 feet from the end of the tank receiving the discharge from the interceptor.

The baffle extended the width of the tank and to within 4 inches of the bottom of the tank.

Tank Length - 8'
Tank Width - 28"
Tank Depth - 32"

Tank was made of corrosion resistant material - yes (yes)
Tank was structurally reinforced - yes (yes)

Waste outlet diameter - 4" (4 inches)
The waste outlet was connected to the bottom of the tank at one end and trapped to retain approximately 26 inches of water in the tank.

The tank provided a 4 inch bottom drain valve to permit draining and cleaning.

3.2 Installation of Testing Equipment:

3.2.1 Direct Connection Test Types A, B, and C:
Findings- The "GB-3 (50 gpm)" was a Type C unit.

3.2.1.1 Waste Piping: **COMPLIES**
The combined horizontal waste, vertical waste riser, interceptor inlet, and discharge piping shall; be 2 inches for test flows of 50 gpm or less and 3 inches for test flows over 50 gpm.
Findings - Test flow was 50 gpm. Pipe size was 2 inches.

3.2.1.2 Sink and Interceptor Locations: **COMPLIES**
The sink was located with the sink rim 13 feet above the outside bottom of the grease interceptor being tested.

3.2.1.3 Skimming Tank Location: **COMPLIES**
The skimming tank was located low enough, with respect to the interceptor, for the discharge piping from the interceptor to clear the tank rim by not less than 3 inches.

3.2.1.4 Installation of Waste Piping: **COMPLIES**

(a) *Sink Connections*- The sink outlet waste connection from each sink compartment was 1-½ inches in size and each connection was fitted with a quick-opening gate valve.

(b) *Combined Horizontal Waste Piping*- The combined horizontal waste piping into which the sink outlets connect were installed with the center line 11 inches below the bottom of the sink and properly hung and braced from the sink reinforcement and supports.
The waste pipe was fitted to the inlet of a flow control and vent.

(c) *Flow Control and/or Vent Device (Optional)*- The flow control and device was adequate in size for the interceptor to be tested and was equipped with the proper size orifice and/or other details to provide the proposed flow rate of the subject interceptor. The waste piping on either side of the flow control and vent was fitted with unions to permit removal of the device.

(d) *Vertical Waste Riser*- The vertical waste riser was connected to the outlet of the flow control and vent device and extended downward to connect to the grease interceptor inlet by means of an elbow and a short horizontal nipple.

(e) *Interceptor Discharge*- The discharge pipe from the interceptor outlet to the skimming tank had a minimum pitch of 1/8 inch per foot and was provided with a 2 inch vent properly located to prevent siphoning of the interceptor.

(f) *Interceptor Connections*- When inlet and outlet openings of the interceptor exceed 2 inches or 3 inches for test flows exceeding 50 gpm, reducing couplings were used to permit connections of the 2 inch or 3 inch.

3.2.2 Indirect Connection Test Type D: **NOT APPLICABLE**

3.3 Preliminary Test Procedure:

3.3.1 Media Analysis: **COMPLIES**
pH of water - 6.4 (6.0 to 8.0)
Specific Gravity of Lard - 0.875 at 150°F (0.875 ± 0.005 at 150°F)

3.3.2 Establishing Sink Compartment Capacity: **COMPLIES**
Capacity of compartment 1- 60 gallons (1.2 x flow rate of interceptor)
Capacity of compartment 2- 60 gallons (1.2 x flow rate of interceptor)

3.3.3 Establishing Vol. of Incremental Discharge:(based on 10" water above sink outlet): **COMPLIES**
Compartment 1 Discharge - 50 gallons (equal to flow rate of interceptor)
Compartment 2 Discharge - 50 gallons (equal to flow rate of interceptor)

3.3.4 Computation of Flow Rate: **FOLLOWED**
The flow rate from the sink was computed by timing the rate of drainage of the first 9 ½" of water from the sink compartment, measured from the 10" mark to the datum line ½" above the sink outlet flange.

3.3.4.1 Check Flow Rate Tests: **COMPLIES**

Test number	Compartment	Time (sec)	gpm	Based on Time
1	1	58	49.1	-
2	1	61	46.7	-
3	1	62	46.0	-
			Avg: 47.3	
1	2	58	49.1	-
2	2	57	50.0	-
3	2	53	53.8	-
			Avg: 51.0	
1	1 & 2 simultaneous	110	51.8	Compartment 1
2	1 & 2 simultaneous	110	51.8	Compartment 1
3	1 & 2 simultaneous	110	51.8	Compartment 1
			Avg: 51.8	
1	1 & 2 simultaneous	112	50.9	Compartment 2
2	1 & 2 simultaneous	112	50.9	Compartment 2
3	1 & 2 simultaneous	111	51.4	Compartment 2
			Avg: 51.1	

For all of the above flow rates, the time for total discharge did not exceed 126 seconds.

3.3.4.2 Calibrated Drainage Flow Rates: **COMPLIES**

Proposed flow rate of Interceptor being tested -____50_____ gpm.

The average of the above calibrated flow rates for simultaneous discharge was equal and didn't exceed by not more than 5% the proposed flow rated of the interceptor being tested.

Findings - ____51.5 gpm average (52.5 gpm max.)

3.4 Skimming Procedure: **FOLLOWED**

The skimming procedure was initiated 5 minutes after the increment to be skimmed has discharged into the tank. The baffles were used alternately until the amounts of grease collected in the procedure are less than 1% by visual observation. Upon completion of the skimming procedure, water shall be drained from the bottom of the pail by means of a spigot. The remainder of the water was collected as describe in the procedure until only a few drops are observed. The lard is then weighed to the nearest ½ gram.

3.5 Rating Test Procedure :
See Table 1 of test report for Rating Testing.

3.5.1 Test Media: **FOLLOWED**
Certification tests were conducted with fresh, unused lard and water as defined and both within a temperature range from 150°F to 160°F.

3.5.2 Ratio of Lard to Water: **FOLLOWED**
The test lard was introduced into one compartment, during each incremental discharge, in the ratio of 1 lb. of lard for each 5 gallons of water in that compartment. Consequently, the proportion of lard to the total amount of water discharged from both sink compartments during each increment was 1 lb. for each 10 gallons respectively. The required amount of test lard, within the above temperature range, was weighed out and poured into the test compartment of the sink.
Findings- 10 lbs per increment used.

3.5.3 Test Increments: **FOLLOWED**

3.5.3.1 Each test increment consisted of the simultaneous discharge of water from both sink compartments and the lard from the test compartment.

3.5.3.2 During the first test increment, the lard was poured into compartment 1 while compartment 2 discharged clear water. During the second test increment the lard was poured into compartment 2 while the water in compartment 1 remained clear.

3.5.4 Flow Rates: **FOLLOWED**
The drainage period for each increment was gauged and timed on the basis of the flow from the compartment containing the clear water. The flow rate from the sink was computed and recorded for each increment. (See Table 1 of test report).

3.5.5 Efficiency Determinations: **FOLLOWED**
The grease was removed from the skimming tank and the efficiency of the interceptor was computed at intervals of five increments or less until the average efficiency reached 93% or less and/or the incremental efficiency reached 85% or less (See Table 1 of test report).

3.5.6 Duration of the Test: **FOLLOWED**
The testing was continued until the average efficiency reached 85% or less and/or the incremental efficiency reached 75% or less.

3.5.7 Determination of Grease Retention Capacity: **FOLLOWED**
Maximum grease retention capacity was 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 %.

3.5.8 Performance Requirements for Rating: **COMPLIES**
The interceptor did conform with or exceeded the following requirements at the breakdown point:
(a) Had an average efficiency of 90% or more.
Findings – 90.9 %

(b) Had an incremental efficiency of 80% or more.
Findings – 80.9 %

(c) Had retained not less than 2 lbs of grease for each 1 gpm average flow rate as determined during the testing.
Findings – 272.76 lbs.

3.5.9 Rated Capacities: **COMPLIES**
Standard rating flow rate and grease retention capacities for grease interceptors were tested in accordance with the above test procedure and did conform with the requirement of ASME A112.14.3-2000.
Findings- Flow Rate 50 gpm
Grease Retention Capacity Rating - 100 lbs.

4 Labeling, Installation, and Maintenance

4.1 Labeling: **COMPLIES**
Products were labeled with the following information:
(a) Manufacturer's name - Schier Products (yes)
(b) Model number - yes (yes)
(c) Rated flow(s) - yes (yes)
(d) "Inlet" and "Outlet" - yes (yes)
(e) ASME A112.14.3 - yes (yes)
(f) Product type by rating - yes (yes)
(g) Efficiency at the rated capacity - yes (yes)

4.2 Installation Instructions: **COMPLIES**
The grease interceptor was provided with complete installation instructions, including but not limited to the following:
(a) Flow control and/or vent requirements - NA (yes)
(b) Separate trapping requirements - yes (yes)
(c) Elevation and accessibility requirements - yes (yes)
(d) Safety and health-related instructions - yes (yes)
(e) Cleanout locations - yes (yes)
(f) Instructions that show the clearances required for maintenance, cleaning, and hazard prevention - yes (yes)
(g) Cautions against installation in any manner except as tested and rated - yes (yes)

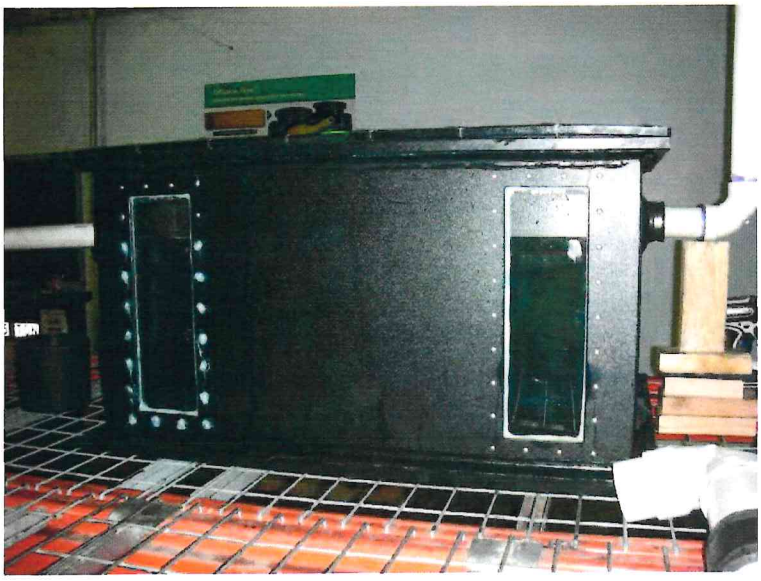
4.3 Maintenance Instructions: **COMPLIES**

Units were provided with complete maintenance instructions including but not limited to the following:

(a) Maintenance Instructions - yes (yes)
(b) Safety and health provisions - yes (yes)

Each grease interceptor was provided with service instructions which included a trouble-shooting guide as well as instructions for performing necessary servicing or for obtaining servicing.

Pictures



GB-3 (50 gpm)

TABLE 1 – Test Results per ASME A112.14.3-2000 (Reaffirmed 2004)

"GB-3 (50 gpm) " Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
1	1	2	112	50.9	10	-	-	-	10	-	-	-
2	2	1	111	51.4	10	-	-	-	20	-	-	-
3	1	2	112	50.9	10	-	-	-	30	-	-	-
4	2	1	112	50.9	10	1.21	38.79	97.0	40	1.21	38.79	97.0
5	1	2	112	50.9	10	-	-	-	50	-	-	-
6	2	1	110	51.8	10	-	-	-	60	-	-	-
7	1	2	112	50.9	10	-	-	-	70	-	-	-
8	2	1	113	50.4	10	2.06	37.94	94.9	80	3.27	76.73	95.9
9	1	2	112	50.9	10	-	-	-	90	-	-	-
10	2	1	112	50.9	10	-	-	-	100	-	-	-
11	1	2	112	50.9	10	-	-	-	110	-	-	-
12	2	1	112	50.9	10	2.76	37.24	93.1	120	6.03	113.97	95.0
13	1	2	112	50.9	10	-	-	-	130	-	-	-
14	2	1	111	51.4	10	-	-	-	140	-	-	-
15	1	2	113	50.4	10	-	-	-	150	-	-	-
16	2	1	113	50.4	10	3.74	36.26	90.7	160	9.77	150.23	93.9
17	1	2	112	50.9	10	-	-	-	170	-	-	-
18	2	1	113	50.4	10	-	-	-	180	-	-	-
19	1	2	112	50.9	10	-	-	-	190	-	-	-
20	2	1	111	51.4	10	3.67	36.33	90.8	200	13.44	186.56	93.3
21	1	2	112	50.9	10	-	-	-	210	-	-	-
22	2	1	113	50.4	10	-	-	-	220	-	-	-
23	1	2	112	50.9	10	-	-	-	230	-	-	-
24	2	1	113	50.4	10	4.13	35.87	89.7	240	17.57	222.43	92.7
25	1	2	114	50.0	10	1.61	8.39	83.9	250	19.18	230.82	92.3
26	2	1	114	50.0	10	1.12	8.88	88.8	260	20.30	239.70	92.2
27	1	2	112	50.9	10	1.33	8.67	86.7	270	21.63	248.37	92.0
28	2	1	112	50.9	10	1.89	8.11	81.1	280	23.52	256.48	91.6

Performance Requirement Rating

"GB-3 (50 gpm)" Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
29	1	2	112	50.9	10	1.81	8.19	81.9	290	25.33	264.67	91.3
30	2	1	113	50.4	10	1.91	8.09	**80.9**	300	27.24	**272.76**	**90.9**
31	1	2	113	50.4	10	2.42	7.58	75.8	310	29.66	280.34	90.4
32	2	1	112	50.9	10	2.34	7.66	76.6	320	32.00	288.00	90.0
33	1	2										
34	2	1										
35	1	2										
36	2	1										
37	1	2										
38	2	1										
39	1	2										
40	2	1										
41	1	2										
42	2	1										
43	1	2										
44	2	1										
45	1	2										
46	2	1										
47	1	2										
48	2	1										
49	1	2										
50	2	1										
51	1	2										
52	2	1										
53	1	2										
54	2	1										
55	1	2										
56	2	1										
57	1	2										

Performance Requirement

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TEST REPORT

Report Number: 1757-18015 **Project Number:** 29480

Report Issued: January 12th, 2018

Client: Schier Products
9500 Woodend Rd.
Edwardsville, KS 66111 **Contact:** Charlie Ismert

Source of Samples: Samples were manufactured at the client's facility in Edwardsville, KS. The sample was witnessed tested by Dale E. Holloway of IAPMO R&T Lab on January 9th, 2018. Samples are manufactured in good condition.

Date of Testing: January 9th, 2018 through January 11th, 2018.

Sample Description: HDPE Grease Interceptor.

Model: **GB-75 (75 gpm)**

Refer to the manufacturer's drawings and installation instructions for more detailed measurements and information.

Scope of Testing: The above grease interceptor was witnessed tested to meet the requirements of ASME A112.14.3-2000 (Reaffirmed 2014) "Grease Interceptors", and CSA B481.1-12 "Testing and rating of grease interceptors using lard".

Conclusion: **The "GB-75 (75 gpm)" Grease Interceptor DID COMPLY with the requirements of ASME A112.14.3-2000 (Reaffirmed 2014) for "Grease Interceptors" and CSA B481.1-12 "Testing and rating of grease interceptors using lard".**

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By the signature below, I certify that all the testing and preparation for this report was performed under direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness tested and reported by,

Dale E. Holloway, Regional Technical Manager
IAPMO R&T Lab

Primary Standards: ASME A112.14.3-2000 (Reaffirmed 2014)

2 General Requirements
2.1 Design
2.2 Rating
2.3 Inlet and Outlet Connections
2.4 Flow Controls and/or Vents
3 Testing
3.1 Construction of Test Equipment
3.2 Installation of Testing Equipment
3.3 Preliminary Test Procedure
3.4 Skimming Procedure
3.5 Rating Test Procedure
4 Labeling, Installation, and Maint.
4.1 Labeling
4.2 Installation Instructions
4.3 Maintenance Instructions

CSA B481.1-12

5 Test Method (Testing is covered under ASME A112.14.3 below)

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

ASME A112.14.3-2000 (Reaffirmed 2014) (also covers CSA B481.1-12)

2 General Requirements:

2.1 Design: **COMPLIES**
The grease interceptor complies with all the applicable requirements of ASME B1.20.1 and ASTM A888.

2.2 Rating: **COMPLIES**
The unit tested was a "Type C" - Units without an external flow control, directly connected.

The manufacturer's installation instructions identifies installation parameters consistent with the test parameters.

2.3 Inlet and Outlet Connections: **COMPLIES**
Inlet and Outlet connections - Hubless coupling is compliant with ASTM A888

2.4 Flow Controls and/or Vents: **COMPLIES**

2.4.1 Vents or air intakes were used. There was no flow control.

2.4.2 When a flow control and/or vent is used during testing for rating a grease interceptor, the rating of the unit did not exceed the maximum flow through the flow control.

The manufacturer's literature reflected that the rating was achieved with the vent attached, and that the vent was installed with the unit.

3 Testing

3.1 Construction of Test Equipment:

3.1.1 Test Sink: **COMPLIES**
Length - 8 ft. (8 ft)
Width - 2 ft. (2 ft)
Depth - 12.5" (12.5 inches)

Corrosion Resistant Material - stainless steel (yes)

Number of compartments - 2 (2)
Compartment length - 4 (4 ft)

Structurally reinforced - yes (yes)
Supported on legs - yes (yes)
Rim height with legs - 3' (3 ft)
Legs structurally supported - yes (yes)

3.1.1.1 Sink Waste Connections: **COMPLIES**
Each sink compartment was fitted with a 1-½" standard sink waste connection with flange, crossbars, slip joint tailpiece, and locknut.

The waste connections were located on opposite sides of the center partition in the corner formed by the side of the sink and the center partition.

3.1.1.2 Water Level Gauges: **COMPLIES**
Each compartment was equipped with a gauge connection and a water level gauge with gauge glass.

Each gauge connection was fitted into the bottom of a sink compartment and in close proximity to the waste outlet.

Each gauge was mounted on the outside of the sink, adjacent to its respective gauge connection, and extended diagonally upward from the bottom center to the top outside corners.

The gauges were calibrated to read directly the number of inches of water in the sink compartments above the sink waste flange.

3.1.1.3 Movable Sink Partitions: **COMPLIES**
Each compartment of the sink was fitted with a movable partition, making it possible to regulate the size of the compartment to any desired capacity.

3.1.2 Skimming Tank: **COMPLIES**
The skimming tank was rectangular in shape; open at the top and equipped with a stationary baffle located approximately 3 feet from the end of the tank receiving the discharge from the interceptor.

The baffle extended the width of the tank and to within 4 inches of the bottom of the tank.

Tank Length - 8'
Tank Width - 28"
Tank Depth - 32"

Tank was made of corrosion resistant material - yes (yes)
Tank was structurally reinforced - yes (yes)

Waste outlet diameter - 4" (4 inches)
The waste outlet was connected to the bottom of the tank at one end and trapped to retain approximately 26 inches of water in the tank.

The tank provided a 4 inch bottom drain valve to permit draining and cleaning.

3.2 Installation of Testing Equipment:

3.2.1 Direct Connection Test Types A, B, and C:
Findings- The "GB-75 (75 gpm)" was a Type C unit.

3.2.1.1 Waste Piping: **COMPLIES**
The combined horizontal waste, vertical waste riser, interceptor inlet, and discharge piping shall; be 2 inches for test flows of 50 gpm or less and 3 inches for test flows over 50 gpm.
Findings - Test flow was 75 gpm. Pipe size was 3 inches.

3.2.1.2 Sink and Interceptor Locations: **COMPLIES**
The sink was located with the sink rim 13 feet above the outside bottom of the grease interceptor being tested.

3.2.1.3 Skimming Tank Location: **COMPLIES**
The skimming tank was located low enough, with respect to the interceptor, for the discharge piping from the interceptor to clear the tank rim by not less than 3 inches.

3.2.1.4 Installation of Waste Piping: **COMPLIES**

(a) *Sink Connections-* The sink outlet waste connection from each sink compartment was 1-½ inches in size and each connection was fitted with a quick-opening gate valve.

(b) *Combined Horizontal Waste Piping-* The combined horizontal waste piping into which the sink outlets connect were installed with the center line 11 inches below the bottom of the sink and properly hung and braced from the sink reinforcement and supports.
The waste pipe was fitted to the inlet of a flow control and vent.

(c) *Flow Control and/or Vent Device (Optional)-* The flow control and device was adequate in size for the interceptor to be tested and was equipped with the proper size orifice and/or other details to provide the proposed flow rate of the subject interceptor. The waste piping on either side of the flow control and vent was fitted with unions to permit removal of the device.

(d) *Vertical Waste Riser-* The vertical waste riser was connected to the outlet of the flow control and vent device and extended downward to connect to the grease interceptor inlet by means of an elbow and a short horizontal nipple.

(e) *Interceptor Discharge-* The discharge pipe from the interceptor outlet to the skimming tank had a minimum pitch of 1/8 inch per foot and was provided with a 2 inch vent properly located to prevent siphoning of the interceptor.

(f) *Interceptor Connections-* When inlet and outlet openings of the interceptor exceed 2 inches or 3 inches for test flows exceeding 50 gpm, reducing couplings were used to permit connections of the 2 inch or 3 inch.

3.2.2 Indirect Connection Test Type D: **NOT APPLICABLE**

3.3 Preliminary Test Procedure:

3.3.1 Media Analysis: **COMPLIES**
pH of water - 6.4 (6.0 to 8.0)
Specific Gravity of Lard - 0.875 at 150°F (0.875 ± 0.005 at 150°F)

3.3.2 Establishing Sink Compartment Capacity: **COMPLIES**
Capacity of compartment 1- 90 gallons (1.2 x flow rate of interceptor)
Capacity of compartment 2- 90 gallons (1.2 x flow rate of interceptor)

3.3.3 Establishing Vol. of Incremental Discharge:(based on 10" water above sink outlet): **COMPLIES**
Compartment 1 Discharge - 75 gallons (equal to flow rate of interceptor)
Compartment 2 Discharge - 75 gallons (equal to flow rate of interceptor)

3.3.4 Computation of Flow Rate: **FOLLOWED**
The flow rate from the sink was computed by timing the rate of drainage of the first 9 ½" of water from the sink compartment, measured from the 10" mark to the datum line ½" above the sink outlet flange.

3.3.4.1 Check Flow Rate Tests: **COMPLIES**

Test number	Compartment	Time (sec)	gpm	Based on Time
1	1	71	60.2	-
2	1	67	63.8	-
3	1	66	64.8	-
			Avg: 62.9	
1	2	62	69.0	-
2	2	63	67.9	-
3	2	63	67.9	-
			Avg: 68.3	
1	1 & 2 simultaneous	110	77.7	Compartment 1
2	1 & 2 simultaneous	109	78.4	Compartment 1
3	1 & 2 simultaneous	109	78.4	Compartment 1
			Avg:78.2	
1	1 & 2 simultaneous	112	76.3	Compartment 2
2	1 & 2 simultaneous	111	77.0	Compartment 2
3	1 & 2 simultaneous	111	77.0	Compartment 2
			Avg: 76.8	

For all of the above flow rates, the time for total discharge did not exceed 126 seconds.

3.3.4.2 Calibrated Drainage Flow Rates: **COMPLIES**

Proposed flow rate of Interceptor being tested -____75_____ gpm.

The average of the above calibrated flow rates for simultaneous discharge was equal and didn't exceed by not more than 5% the proposed flow rated of the interceptor being tested.

Findings - _____77.5 gpm average (78.8 gpm max.)

3.4 Skimming Procedure: **FOLLOWED**

The skimming procedure was initiated 5 minutes after the increment to be skimmed has discharged into the tank. The baffles were used alternately until the amounts of grease collected in the procedure are less than 1% by visual observation. Upon completion of the skimming procedure, water shall be drained from the bottom of the pail by means of a spigot. The remainder of the water was collected as describe in the procedure until only a few drops are observed. The lard is then weighed to the nearest ½ gram.

3.5 Rating Test Procedure :
See Table 1 of test report for Rating Testing.

3.5.1 Test Media: **FOLLOWED**
Certification tests were conducted with fresh, unused lard and water as defined and both within a temperature range from 150°F to 160°F.

3.5.2 Ratio of Lard to Water: **FOLLOWED**
The test lard was introduced into one compartment, during each incremental discharge, in the ratio of 1 lb. of lard for each 5 gallons of water in that compartment. Consequently, the proportion of lard to the total amount of water discharged from both sink compartments during each increment was 1 lb. for each 10 gallons respectively. The required amount of test lard, within the above temperature range, was weighed out and poured into the test compartment of the sink.
Findings- 15 lbs per increment used.

3.5.3 Test Increments: **FOLLOWED**

3.5.3.1 Each test increment consisted of the simultaneous discharge of water from both sink compartments and the lard from the test compartment.

3.5.3.2 During the first test increment, the lard was poured into compartment 1 while compartment 2 discharged clear water. During the second test increment the lard was poured into compartment 2 while the water in compartment 1 remained clear.

3.5.4 Flow Rates: **FOLLOWED**
The drainage period for each increment was gauged and timed on the basis of the flow from the compartment containing the clear water. The flow rate from the sink was computed and recorded for each increment. (See Table 1 of test report).

3.5.5 Efficiency Determinations: **FOLLOWED**
The grease was removed from the skimming tank and the efficiency of the interceptor was computed at intervals of five increments or less until the average efficiency reached 93% or less and/or the incremental efficiency reached 85% or less (See Table 1 of test report).

3.5.6 Duration of the Test: **FOLLOWED**
The testing was continued until the average efficiency reached 85% or less and/or the incremental efficiency reached 75% or less.

3.5.7 Determination of Grease Retention Capacity: **FOLLOWED**
Maximum grease retention capacity was 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 %.

3.5.8 Performance Requirements for Rating: **COMPLIES**
The interceptor did conform with or exceeded the following requirements at the breakdown point:
(a) Had an average efficiency of 90% or more.
Findings – 90.8 %

(b) Had an incremental efficiency of 80% or more.
Findings – 82.3 %

(c) Had retained not less than 2 lbs of grease for each 1 gpm average flow rate as determined during the testing.
Findings – 653.47 lbs.

3.5.9 Rated Capacities: **COMPLIES**
Standard rating flow rate and grease retention capacities for grease interceptors were tested in accordance with the above test procedure and did conform with the requirement of ASME A112.14.3-2000.
Findings- Flow Rate 75 gpm
Grease Retention Capacity Rating - 150 lbs.

4 Labeling, Installation, and Maintenance

4.1 Labeling: **COMPLIES**
Products were labeled with the following information:
(a) Manufacturer's name - Schier Products (yes)
(b) Model number - yes (yes)
(c) Rated flow(s) - yes (yes)
(d) "Inlet" and "Outlet" - yes (yes)
(e) ASME A112.14.3 - yes (yes)
(f) Product type by rating - yes (yes)
(g) Efficiency at the rated capacity - yes (yes)

4.2 Installation Instructions: **COMPLIES**
The grease interceptor was provided with complete installation instructions, including but not limited to the following:
(a) Flow control and/or vent requirements - NA (yes)
(b) Separate trapping requirements - yes (yes)
(c) Elevation and accessibility requirements - yes (yes)
(d) Safety and health-related instructions - yes (yes)
(e) Cleanout locations - yes (yes)
(f) Instructions that show the clearances required for maintenance, cleaning, and hazard prevention - yes (yes)
(g) Cautions against installation in any manner except as tested and rated -yes (yes)

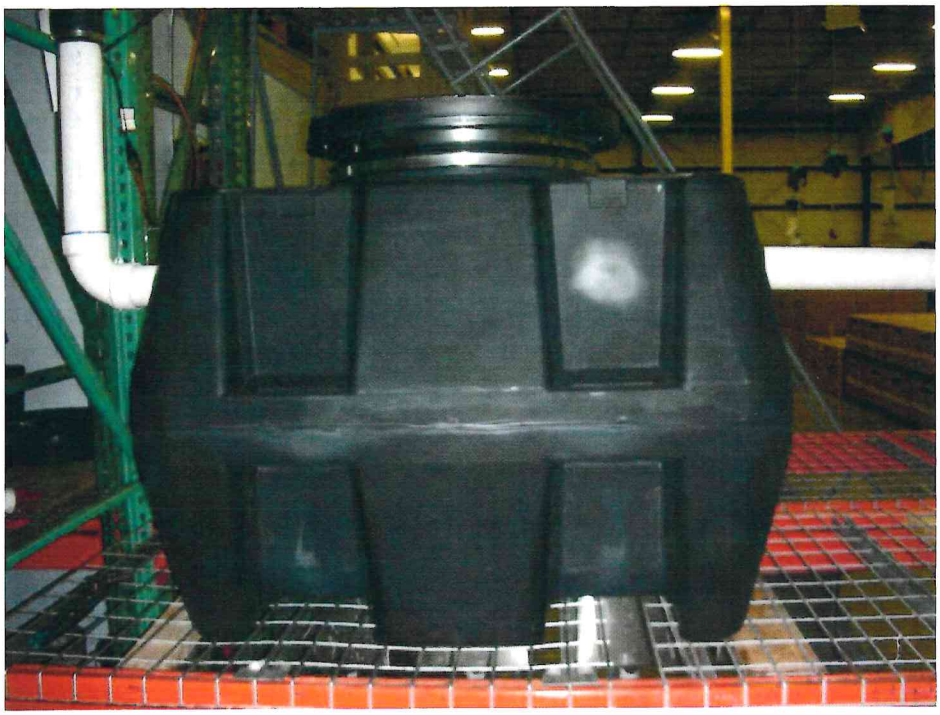
4.3 Maintenance Instructions: **COMPLIES**

Units were provided with complete maintenance instructions including but not limited to the following:

(a) Maintenance Instructions - yes (yes)
(b) Safety and health provisions - yes (yes)

Each grease interceptor was provided with service instructions which included a trouble-shooting guide as well as instructions for performing necessary servicing or for obtaining servicing.

Pictures



GB-75 (75 gpm)

TABLE 1 – Test Results per ASME A112.14.3-2000 (Reaffirmed 2014)

"GB-75 (75 gpm) " Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
1	1	2	113	75.7	15	0.79	14.21	94.7	15	0.79	14.21	94.7
2	2	1	109	78.4	15	0.64	14.36	95.7	30	1.43	28.57	95.2
3	1	2	109	78.4	15	0.86	14.14	94.3	45	2.29	42.71	94.9
4	2	1	109	78.4	15	0.62	14.38	95.9	60	2.91	57.09	95.2
5	1	2	109	78.4	15	0.95	14.05	93.7	75	3.86	71.41	94.9
6	2	1	109	78.4	15	0.90	14.10	94.0	90	4.76	85.24	94.7
7	1	2	109	78.4	15	0.90	14.10	94.0	105	5.66	99.34	94.6
8	2	1	109	78.4	15	1.07	13.93	92.9	120	6.73	113.27	94.4
9	1	2	109	78.4	15	1.15	13.85	92.3	135	7.88	127.12	94.2
10	2	1	109	78.4	15	0.86	14.14	94.3	150	8.74	141.26	94.2
11	1	2	109	78.4	15	1.20	13.80	92.0	165	9.94	155.06	94.0
12	2	1	109	78.4	15	0.77	14.23	94.9	180	10.71	169.29	94.1
13	1	2	110	77.7	15	1.08	13.92	92.8	195	11.79	183.21	94.0
14	2	1	109	78.4	15	1.03	13.97	93.1	210	12.82	197.18	93.9
15	1	2	109	78.4	15	1.23	13.77	91.8	225	14.05	210.95	93.8
16	2	1	109	78.4	15	2.07	12.93	86.2	240	16.12	223.88	93.3
17	1	2	109	78.4	15	1.44	13.56	90.4	255	17.56	237.44	93.1
18	2	1	110	77.7	15	0.88	14.12	94.1	270	18.44	251.56	93.2
19	1	2	110	77.7	15	0.98	14.02	93.5	285	19.42	265.58	93.2
20	2	1	109	78.4	15	0.89	14.11	94.1	300	20.31	279.69	93.2
21	1	2	109	78.4	15	1.05	13.95	93.0	315	21.36	293.64	93.2
22	2	1	110	77.7	15	1.06	13.94	92.9	330	22.42	307.58	93.2
23	1	2	110	77.7	15	1.50	13.50	90.0	345	23.92	321.08	93.1
24	2	1	109	78.4	15	1.05	13.95	93.0	360	24.97	335.03	93.1
25	1	2	111	77.0	15	1.77	13.23	88.2	375	26.74	348.26	92.1
26	2	1	110	77.0	15	2.53	12.47	83.1	390	29.27	360.73	92.5
27	1	2	109	78.4	15	1.07	13.93	92.9	405	30.34	374.66	92.5
28	2	1	109	78.4	15	1.26	13.75	91.6	420	31.60	388.40	92.5

Performance Requirement Rating

"GB-75 (75 gpm)" Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
29	1	2	109	78.4	15	1.55	13.45	89.7	435	33.15	401.85	92.4
30	2	1	110	77.0	15	1.20	13.80	92.0	450	34.35	415.65	92.4
31	1	2	109	78.4	15	1.31	13.69	91.3	465	35.66	429.34	92.3
32	2	1	109	78.4	15	1.60	13.40	89.3	480	37.26	442.74	92.2
33	1	2	109	78.4	15	1.59	13.41	89.4	495	38.85	456.15	92.2
34	2	1	109	78.4	15	1.05	13.95	93.0	510	39.90	470.10	92.2
35	1	2	109	78.4	15	1.58	13.42	89.5	525	41.48	483.52	92.1
36	2	1	109	78.4	15	1.41	13.59	90.6	540	42.89	497.11	92.1
37	1	2	109	78.4	15	1.53	13.47	89.8	555	44.42	510.58	92.0
38	2	1	109	78.4	15	1.50	13.50	90.0	570	45.92	524.08	91.9
39	1	2	110	77.0	15	1.56	13.44	89.6	585	47.48	537.52	91.9
40	2	1	109	78.4	15	1.70	13.30	88.7	600	49.18	550.82	91.8
41	1	2	110	77.0	15	2.01	12.99	86.6	615	51.19	563.81	91.7
42	2	1	109	78.4	15	1.59	13.41	89.4	630	52.78	577.22	91.6
43	1	2	109	78.4	15	2.06	12.94	86.3	645	54.84	590.16	91.5
44	2	1	109	78.4	15	1.63	13.37	89.1	660	56.47	603.53	91.4
45	1	2	110	77.0	15	2.83	12.17	81.1	675	59.30	615.70	91.2
46	2	1	109	78.4	15	1.81	13.19	87.9	690	61.11	628.89	91.1
47	1	2	109	78.4	15	2.77	12.23	81.5	705	63.88	641.12	90.9
48	2	1	109	78.4	15	2.65	12.35	**82.3**	720	66.53	**653.47**	**90.8**
49	1	2	110	77.0	15	4.00	11.00	73.3	735	70.53	664.47	90.4
50	2	1	110	77.0	15	4.02	10.98	73.2	750	74.55	675.45	90.1
51	1	2										
52	2	1										
53	1	2										
54	2	1										
55	1	2										
56	2	1										
57	1	2										

Performance Requirement

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TEST REPORT

Report Number: **1757-18020** **Project Number:** 30469

Report Issued: July 20th, 2018

Client: Schier Products
9500 Woodend Rd.
Edwardsville, KS 66111 **Contact:** Charlie Ismert

Source of Samples: Samples were manufactured at the client's facility in Edwardsville, KS. The sample was witnessed tested by Dale E. Holloway of IAPMO R&T Lab. Samples are manufactured in good condition.

Date of Testing: July 16th, 2018 through July19th, 2018

Sample Description: HDPE Grease Interceptor.

Model: **"GB-250" (200 gpm)**

Refer to the manufacturer's drawings and installation instructions for more detailed measurements and information.

Scope of Testing: The above grease interceptor was witnessed tested to meet the requirements of ASME A112.14.3-2018 "Hydromechanical Grease Interceptors", and CSA B481.1-12 "Testing and rating of grease interceptors using lard".

Conclusion: **The "GB-250" (200 gpm) Grease Interceptor DID COMPLY with the requirements of ASME A112.14.3-2018 "Hydromechanical Grease Interceptors" and CSA B481.1-12 "Testing and rating of grease interceptors using lard".**

By the signature below, I certify that all the testing and preparation for this report was performed under direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness tested and reported by,

Dale E. Holloway, Regional Technical Manager
IAPMO R&T Lab

Primary Standards: ASME A112.14.3-2018

2 General Requirements
2.1 Rating
2.2 Inlet and Outlet Connections
2.3 Flow Controls and/or Vents
3 Testing
3.1 Construction of Test Equipment
3.2 Installation of Testing Equipment
3.3 Preliminary Test Procedure
3.4 Rating Test Procedure
3.5 Skimming Procedure
4 Labeling, Installation, and Maint.
4.1 Labeling
4.2 Installation Components
4.3 Maintenance and Cleaning Instructions

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

CSA B481.1-12

5 Test Method (Testing is covered under ASME A112.14.3 below)

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

ASME A112.14.3-2018

2 General Requirements:

2.1 Rating: **COMPLIES**
The flow rate and grease retention capacity of each grease interceptor was determined by application of the parameter of this Standard.
The unit tested was a "Type C" - Units without an external flow control, directly connected.

2.2 Inlet and Outlet Connections: **COMPLIES**
Inlet and Outlet connections - Hubless coupling is compliant with ASTM A888

2.3 Flow Controls and/or Vents: **COMPLIES**

2.3.1 Flow control and Vents or air intakes were used.

2.3.2 When a flow control and/or vent is used during testing for rating a grease interceptor, the rating of the unit did not exceed the maximum flow through the flow control.

The manufacturer's literature reflected that the rating was achieved with the flow control and vent attached, and that the flow control and vent was installed with the unit.

Testing

3.1 Construction of Test Equipment:

3.1.1 Test Sink: **COMPLIES**

Length - 8' (8 ft)
Width - 2' (2 ft)
Depth - 12.5" (12.5 inches)
Note: Multiples of 2 sinks

Corrosion Resistant Material - stainless steel (yes)

Number of compartments - 2 (2)

Structurally reinforced - yes (yes)
Supported on legs - yes (yes)
Rim height with legs - 3' (3 ft)
Legs structurally supported - yes (yes)

3.1.1.1 Sink Waste Connections: **COMPLIES**
Each sink compartment was fitted with a 1-½" (up to 50 gpm) or 2" (greater than 50 gpm) standard sink waste connection with flange, crossbars, slip joint tailpiece, and locknut.

The waste connections were located on opposite sides of the center partition in the corner formed by the side of the sink and the center partition.

3.1.1.2 Water Level Gauges: **COMPLIES**
Each compartment was equipped with a gauge connection and a water level gauge with gauge glass.

Each gauge connection was fitted into the bottom of a sink compartment and in close proximity to the waste outlet.

Each gauge was mounted on the outside of the sink, adjacent to its respective gauge connection, and extended diagonally upward from the bottom center to the top outside corners.

The gauges were calibrated to read directly the number of inches of water in the sink compartments above the sink waste flange.

3.1.1.3 Movable Sink Partitions: **COMPLIES**
Each compartment of the sink was fitted with a movable partition, making it possible to regulate the size of the compartment to any desired capacity.

3.1.2 Skimming Tank: **COMPLIES**
The skimming tank was rectangular in shape and open at the top.

Tank Length - 12'
Tank Width - 36"
Tank Depth - 28"

Tank was made of corrosion resistant material - yes (yes)
Tank was structurally reinforced - yes (yes)

Waste outlet diameter - 4" (4 inches)
The waste outlet was connected to the bottom of the tank at one end and trapped to retain approximately 18 inches of water in the tank.

The tank provided a stationary baffle located approximately 4 ft. from the end of the tank receiving the discharge from the interceptor. This baffle extended the width of the tank and to within 4" of the bottom of the tank.

3.2 Installation of Testing Equipment:

3.2.1 Direct Connection Test Types A, B, and C:
Findings- The "GB-250" was a Type C unit.

3.2.1.1 Waste Piping: **COMPLIES**
The combined horizontal waste, vertical waste riser, interceptor inlet, and discharge piping shall; be 2 inches for test flows of 50 gpm or less and 3 inches for test flows over 50 gpm. Discharge piping from the interceptor on test shall be equal to the outlet of the interceptor.
Findings - Test flow was 200 gpm. Pipe size was 3 inches.

3.2.1.2 Sink and Interceptor Locations: **COMPLIES**
The sink was located with the sink rim 13 feet above the outside bottom of the grease interceptor being tested. The interceptor shall be so located that its bottom is 10 ft. below the floor level upon which the sink is located.

3.2.1.3 Skimming Tank Location: **COMPLIES**
The skimming tank was located low enough, with respect to the interceptor, for the discharge piping from the interceptor to clear the tank rim by not less than 3 inches.

3.2.1.4 Installation of Waste Piping: **COMPLIES**
(a) *Sink Connections*- The sink outlet waste connection from each sink compartment was 1-½ inches in size (for up to 50 gpm) or 2" (for over 50 gpm) and each connection was fitted with a quarter-turn ball quick-opening valve.
(b) *Combined Horizontal Waste Piping*- The combined horizontal waste piping into which the sink outlets connect were installed with the center line 11 inches below the bottom of the sink and properly hung and braced from the sink reinforcement and supports. The waste pipe was fitted to the inlet of a flow control and vent.
(c) *Flow Control and/or Vent Device (Optional)*- The flow control and device was adequate in size for the interceptor to be tested and was equipped with the proper size orifice and/or other details to provide the proposed flow rate of the subject interceptor. The waste piping on either side of the flow control and vent was fitted with unions to permit removal of the device.

(d) *Vertical Waste Riser-* The vertical waste riser was connected to the outlet of the flow control and vent device and extended downward to connect to the grease interceptor inlet by means of an elbow and a short horizontal nipple. Test flows exceeding 50 gpm requiring connections larger than 2", interceptor inlet and outlet sizes shall be no less than 3".

(e) *Interceptor Inlet Connection-* If the inlet diameter of the interceptor to be tested exceeds the riser pipe diameter size, reducing couplings shall be permitted.

(f) *Interceptor Discharge-* The discharge pipe from the interceptor outlet to the skimming tank shall be the same size to the outlet of the interceptor. The skimming tank had a minimum pitch of 1/8 inch per foot and was provided with a 2 inch vent properly located to prevent siphoning of the interceptor.

3.2.2 Indirect Connection Test Type D: **NOT APPLICABLE**

3.3 Preliminary Test Procedure:

3.3.1 Media Analysis: **COMPLIES**
pH of water - 6.4 (6.0 to 8.0)
Specific Gravity of Lard - 0.875 at 150°F (0.875 ± 0.005 at 150°F)
Viscosity in Seconds Saybolt Universal @ 150°F

3.3.2 Establishing Sink Compartment Capacity: **COMPLIES**
Capacity of compartment 1- 240 gallons (1.2 x flow rate of interceptor)
Capacity of compartment 2- 240 gallons (1.2 x flow rate of interceptor)

3.3.3 Establishing Vol. of Incremental Discharge: (based on 10" water above sink outlet): **COMPLIES**
Compartment 1 Discharge - 200 gallons (equal to flow rate of interceptor)
Compartment 2 Discharge - 200 gallons (equal to flow rate of interceptor)

3.3.4 Computation of Flow Rate: **FOLLOWED**
The flow rate from the sink was computed by timing the rate of drainage of the first 9 ½" of water from the sink compartment, measured from the 10" mark to the datum line ½" above the sink outlet flange.

3.3.4.1 Check Flow Rate Tests: **COMPLIES**

Test number	Compartment	Time (sec)	gpm	Based on Time
1	1	79	144.3	-
2	1	76	150.0	-
3	1	76	150.0	-
			Avg: 148.1	
1	2	77	148.1	-
2	2	75	152.0	-
3	2	76	150.0	-
			Avg: 150.0	
1	1 & 2 simultaneous	111	205.4	Compartment 1
2	1 & 2 simultaneous	111	205.4	Compartment 1
3	1 & 2 simultaneous	111	205.4	Compartment 1
			Avg: 205.4	
1	1 & 2 simultaneous	109	209.2	Compartment 2
2	1 & 2 simultaneous	110	207.3	Compartment 2
3	1 & 2 simultaneous	110	207.3	Compartment 2
			Avg: 207.9	

For the above simultaneous flow rates, the time for total discharge shall be between 108.6 seconds and 114 seconds.

3.3.4.2 Calibrated Drainage Flow Rates: **COMPLIES**
Proposed flow rate of Interceptor being tested - 200 gpm.
The average of the above calibrated flow rates for simultaneous discharge was equal and didn't exceed by not more than 5% the proposed flow rated of the interceptor being tested.
Findings - 206.7 gpm average (210 gpm max.)

3.4 Rating Test Procedure: **FOLLOWED**
See Table 1 of test report for Rating Testing.

3.4.1 Test Media: **FOLLOWED**
Certification tests were conducted with fresh, unused lard and water as defined and both within a temperature range from 150°F to 160°F.

3.4.2 Ratio of Lard to Water: **FOLLOWED**
The test lard was introduced into one compartment, during each incremental discharge, in the ratio of 1 lb. of lard for each 5 gallons of water in that compartment. Consequently, the proportion of lard to the total amount of water discharged from both sink compartments during each increment was 1 lb. for each 10 gallons respectively. The required amount of test lard, within the above temperature range, was weighed out and poured into the test compartment of the sink.
Findings- 40 lbs per increment used.

3.4.3 Test Increments: **FOLLOWED**

Each test increment consisted of the simultaneous discharge of water from both sink compartments and the lard from the test compartment.

During the first test increment, the lard was poured into compartment 1 while compartment 2 discharged clear water. During the second test increment the lard was poured into compartment 2 while the water in compartment 1 remained clear.

3.4.4 Flow Rates: **FOLLOWED**

The drainage period for each increment was gauged and timed on the basis of the flow from the compartment containing the clear water. The flow rate from the sink was computed and recorded for each increment. (See Table 1 of test report).

3.4.5 Efficiency Determinations (Minimum Grease Capacity): **NOT USED**

At the option of the manufacturer the efficiency determination was conducted at the interceptor's minimum grease capacity per Table 1 or at the interceptor's maximum grease capacity by determining the break down point.

3.4.6 Efficiency Determinations (Maximum Grease Capacity): **FOLLOWED**

The grease was removed from the skimming tank and the efficiency of the interceptor was computed at intervals of five increments or less until the average efficiency reached 93% or less and/or the incremental efficiency reached 85% or less (See Table 1 of test report).

3.4.6.1 Duration of the Test: **FOLLOWED**

The testing was continued until the average efficiency reached 85% or less and/or the incremental efficiency reached 75% or less.

3.4.6.2 Determination of Test Breakdown Grease Capacity: **FOLLOWED**

Maximum grease retention capacity was 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 %.

3.4.7 Efficiency Determinations (Minimum Grease Capacity): **NOT USED**

3.4.8 Performance Requirements for Certification: **COMPLIES**

The interceptor did conform with or exceeded the following requirements at the breakdown point:

(a) Had an average efficiency of 90% or more.

Findings – 93.5 %

(b) Had an incremental efficiency of 80% or more.

Findings – 84.0 %

(c) Had retained not less than 2 lbs of grease for each 1 gpm average flow rate as determined during the testing.

Findings – 1196.30 lbs.

3.4.9 Rated Capacities: **COMPLIES**

Standard rating flow rate and grease retention capacities for grease interceptors were tested in accordance with the above test procedure and did conform with the requirement of ASME A112.14.3-2018.

Findings- Flow Rate 200 gpm
Grease Retention Capacity Rating - 400 lbs.
Actual Grease Retention Capacity - 1196.30 lbs.

3.5 Skimming Procedure: **FOLLOWED**

The skimming procedure was initiated 5 minutes after the increment to be skimmed has discharged into the tank. The baffles were used alternately until the amounts of grease collected in the procedure are less than 1% by visual observation. Upon completion of the skimming procedure, water shall be drained from the bottom of the pail by means of a spigot. The remainder of the water was collected as describe in the procedure until only a few drops are observed. The lard is then weighed to the nearest ½ gram.

4 Labeling, Installation, and Maintenance

4.1 Labeling: **COMPLIES**

Products were labeled with the following information:

(a) Manufacturer's name - Schier Products (yes)
(b) Model number - GB-250 (yes)
(c) Rated flow(s) - yes (yes)
(d) "Inlet" and "Outlet" - yes (yes)
(e) ASME A112.14.3 - yes (yes)
(f) Efficiency at the minimum grease capacity - yes (yes)
(g) If appropriate, flow control model number and or orifice size - NA

4.2 Installation Components: **COMPLIES**

The grease interceptor was provided with complete installation instructions, including but not limited to the following:

(a) Flow control and/or vent requirements - yes (yes)
(b) Separate trapping requirements - yes (yes)
(c) Elevation and accessibility requirements - yes (yes)
(d) Safety and health-related instructions - yes (yes)
(e) Cleanout locations - yes (yes)
(f) Instructions that show the clearances required for maintenance, cleaning, and hazard prevention - yes (yes)
(g) Cautions against installation in any manner except as tested and rated- yes (yes)
(h) Where a reducer is required on the outlet, it shall be eccentric with the flat on the bottom- NA

4.3 Maintenance and Cleaning Instructions: **COMPLIES**

Units were provided with complete maintenance instructions including but not limited to the following:

(a) Maintenance Instructions - yes (yes)
(b) Safety and health provisions - yes (yes)
(c) Cleaning instructions - yes (yes)

Each grease interceptor was provided with service instructions and cleaning instructions which included a trouble-shooting guide as well as instructions for performing necessary servicing or for obtaining servicing.

Pictures

GB-250 (200 gpm)

TABLE 1 – Test Results per ASME A112.14.3-2018

"GB-250" (200 gpm) Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
1	1	2	111	205.4	40	1.01	38.99	97.5	40	1.01	38.99	97.5
2	2	1	110	207.3	40	1.67	38.33	95.8	80	2.68	77.32	96.7
3	1	2	111	205.4	40	2.50	37.50	93.8	120	5.18	114.82	95.7
4	2	1	112	203.6	40	2.07	37.93	94.8	160	7.25	152.75	95.5
5	1	2	113	201.8	40	2.50	37.50	93.8	200	9.75	190.25	95.1
6	2	1	112	203.6	40	1.65	38.35	95.9	240	11.40	228.60	95.3
7	1	2	111	205.4	40	2.13	37.87	94.7	280	13.53	266.47	95.2
8	2	1	112	203.6	40	1.40	38.60	96.5	320	14.93	305.07	95.3
9	1	2	113	201.8	40	1.88	38.12	95.3	360	16.81	343.19	95.3
10	2	1	111	205.4	40	1.45	38.55	96.4	400	18.26	381.74	95.4
11	1	2	113	201.8	40	1.92	38.08	95.2	440	20.18	419.82	95.4
12	2	1	111	205.4	40	1.74	38.26	95.7	480	21.92	458.08	95.4
13	1	2	113	201.8	40	2.04	37.96	94.9	520	23.96	496.04	95.4
14	2	1	110	207.3	40	1.70	38.30	95.8	560	25.66	534.34	95.4
15	1	2	111	205.4	40	1.78	38.22	95.6	600	27.44	572.56	95.4
16	2	1	113	201.8	40	1.82	38.18	95.5	640	29.26	610.74	95.4
17	1	2	112	203.6	40	1.94	38.06	95.2	680	31.20	648.80	95.4
18	2	1	111	205.4	40	1.27	38.73	96.8	720	32.47	687.53	95.5
19	1	2	111	205.4	40	2.11	37.89	94.7	760	34.58	725.42	95.5
20	2	1	111	205.4	40	1.95	38.05	95.1	800	36.53	763.47	95.4
21	1	2	111	205.4	40	2.64	37.36	93.4	840	39.17	800.83	95.3
22	2	1	111	205.4	40	2.55	37.45	93.6	880	41.72	838.28	95.3
23	1	2	112	203.6	40	2.89	37.11	92.8	920	44.61	875.39	95.2
24	2	1	111	205.4	40	2.20	37.80	94.5	960	46.81	913.19	95.1
25	1	2	111	205.4	40	3.65	36.35	90.9	1000	50.46	949.54	95.0
26	2	1	111	205.4	40	2.65	37.35	93.3	1040	53.11	986.89	94.9
27	1	2	112	203.6	40	4.23	35.77	89.4	1080	57.34	1022.66	94.7
28	2	1	111	205.4	40	3.45	36.55	91.4	1120	60.79	1059.21	94.6

Performance Requirement Rating

"GB-250" (200 gpm)		Grease Interceptor			INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
29	1	2	111	205.4	40	4.76	35.24	88.1	1160	65.55	1094.45	94.3
30	2	1	111	205.4	40	5.10	34.90	87.3	1200	70.65	1129.35	94.1
31	1	2	111	205.4	40	6.66	33.34	83.4	1240	77.31	1162.69	93.8
32	2	1	112	203.6	40	6.39	33.61	**84.0**	1280	83.70	**1196.30**	**93.5**
33	1	2	111	205.4	40	8.35	31.65	79.1	1320	92.05	1227.95	93.0
34	2	1	111	205.4	40	8.30	31.70	79.3	1360	100.35	1259.65	92.6
35	1	2										
36	2	1										
37	1	2										
38	2	1										
39	1	2										
40	2	1										
41	1	2										
42	2	1										
43	1	2										
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54	2	1										
55	1	2										
56	2	1										
57	1	2										

Performance Requirement Rating