



TEST REPORT

5001 East Philadelphia Street
Ontario, California – USA 91761-2816

Ph: 909.472.4100 | Fax: 909.472.4243
<http://www.iapmortl.org>

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 July 19th, 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

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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										
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Performance Requirement Rating