QAI LABORATORIES
CERTIFICATION TESTING INSPECTION

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CLIENT: **MIFAB, Inc.**
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Test Report No: TJ5176	Date: January 24, 2018

SAMPLE ID: **SUPER-500; SUPER-750; SUPER-1000; SUPER-1300; SUPER-1500**

SAMPLING DETAIL: Test samples were submitted to the laboratory directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: Samples were received at QAI on November 8, 2017.

TESTING PERIOD: December 4, 2017 – December 27, 2017.

AUTHORIZATION: Signed Work Order (17SP103102) by Jason Gremchuk on October 31, 2017.

TEST PROCEDURE: Test and evaluate the submitted samples to *IAPMO/ ANSI Z1001-2013 Prefabricated Gravity Grease Interceptors.*

TEST RESULTS: The samples **meet** the criteria of ANSI Z1001-2013. Detailed test results are presented in the subsequent pages of this report.

Prepared By

Jeff Foster
Laboratory Test Technician

Signed for and on behalf of QAI Laboratories, Inc.

Christopher Clark
Plumbing Project Manager

4 General Requirements

4.1 General — Pass

Requirements: Prefabricated gravity grease interceptors shall be watertight; shall have a static liquid volume of at least 1,136 L (300 gal); and should have at least two compartments.

4.2 Drawings and Supporting Documentation — Pass

Requirements: Drawings and supporting documentation for grease interceptors shall show materials, dimensions, and capacities and other information necessary to demonstrate compliance with this Standard. Supporting documentation, including structural design calculations, shall be signed by a licensed professional engineer.

4.3 Structural Strength — Pass

Requirements: Grease interceptor exterior walls shall be capable of withstanding an internal hydrostatic pressure exerted by a column of water of a height equivalent to the height of the outlet invert; and an external earth load equivalent to the pressure exerted by a fluid with a density of 480 kg/m^3 (30 lb/ft^3).

Grease interceptors and their covers shall be capable of carrying a vertical earth load of at least 24 kPa (500 lb/ft^2) [i.e., equivalent to a burial depth of 900 mm (3 ft)].

Partitions and baffles shall be capable of withstanding hydrostatic loads occurring when one compartment is empty and the remaining compartments(s) is full.

4.4 Access Openings — Pass

Requirements: Grease interceptors shall have at least two access openings, as follows:

One access openings shall be located over the inlet device; and

The second access opening over the outlet device.

Every compartment of a grease interceptor shall have at least one access opening with a minimum dimension of 500 mm (20 in) inside dimension. When a compartment exceeds 3.65 m (12 ft) in length, a second access opening shall be provided; and the second opening shall be located over the baffle, when applicable.

4.5 Inlets and Outlets — Pass

Requirements: Grease interceptor inlets and outlets shall be able to accommodate NPS-4 or larger pipes.

Inlet and outlet devices shall be open-topped; extend to within 305 mm (12 in) of the inside floor of the grease interceptor; and extend at least 120 mm (5 in) above the liquid surface.

Outlet devices shall not be smaller in size than the connecting service pipe.

The invert of the inlet pipe shall be at least 50 mm (2 in) above the invert of the outlet pipe.

4.6 Venting — Pass

Requirements: Partitions, baffles, and inlet and outlet devices shall have a venting area not smaller than the cross-sectional area of the inlet or the outlet, whichever is greater.

There shall be a separation of at least 25 mm (1 in) between the top of the grease interceptor and the top of the vent opening.

4.7 Partitions and Baffles **Pass**

Requirements: Partitions and baffles separate compartments and shall extend at least 120 mm (5 in) above the liquid surface.

Flow between compartments shall be through a horizontal slot having a cross-sectional area of at least two times the area of the inlet device; inverted tee, 90˚ elbow, or similar fitting at least NPS-4 but in no case smaller than the grease interceptor inlet; or two or more equally spaced openings having a combined cross-sectional area of at least two times the area of the inlet device.

The fitting inlets or the centroids of the openings shall be located between 50% and 75% of the liquid depth, measured from the inside floor of the grease interceptor.

4.8 Air Space **Pass**

Requirements: Grease interceptors shall have at least 230 mm (9 in) of air space above the liquid level. The air space shall have a volume equivalent to at least 10% of the working liquid volume of the grease interceptor.

4.9 Risers **Pass**

Requirements: When applicable, grease interceptors shall have a means of connecting with an access opening extension system (i.e., risers) that is watertight.

4.10 Covers **Pass**

Requirements: Openings shall be capable of accommodating covers (i.e., lids) that are watertight; are secure; do not slide, rotate, or flip open; and are capable of supporting the anticipated loads.

4.11 Pipe Connectors **Pass**

Requirements: Connections between pipes and grease interceptors shall be made with plain-end connectors; flanged connectors complying with ASME B16.5; threaded male or female connectors complying with ASME B1.20.1; flexible connectors that comply with ASTM C923 or ASTM C1644, for precast-concrete grease interceptors; or flexible connectors that comply with Sections 7 of ASTM C923 or Section 7 of ASTM C1644, for grease interceptors made of materials other than precast concrete.

4.12 Installation-Site Assembly **Pass**

Requirements: Installation-site assembly of grease interceptors and components (i.e., assembly at a location other than the grease interceptor manufacturing facility or manufacturer-authorized assembly facility) shall be kept to a minimum. When installation-site assembly of grease interceptors is necessary, all materials for proper assembly shall be provided with each grease interceptor. Joints made on site shall be as durable and watertight as joints made at the manufacturing or manufacturer-authorized assembly facility.

4.13 Joints **Pass**

Requirements: Joints intended for assembly at a location other than the grease interceptor manufacturing facility shall be manufactured in such a way that uniform pressure is exerted on the connection along its entire length; and have a continuous watertight seal.

The means for sealing the joints shall be as specified by the manufacturer.

4.14 Free Surface Area **Pass**

Requirements: Grease interceptors shall have a free liquid area of at least 0.09 m² (1 ft²) for every 170 L (45 gal) of liquid volume.

7 Thermoplastic Grease Interceptors

Thermoplastic grease interceptors shall comply with Section 7 of IAPMO/ ANSI Z1000.

IAPMO/ ANSI Z1000-2013, Sec. 7 Thermoplastic Septic Tanks **Pass**

7.1 Blow-Molded and Single-Layer Rotationally-Molded Polyethylene Septic Tanks

7.1.1 Compound **Pass**

Requirements: Polyethylene for blow-molded and single-layer rotationally-molded septic tanks shall have at least a cell classification of 21423E as specified in ASTM D3350 and 1% carbon black, as specified in ASTM D1603.

7.1.2 Physical Properties

7.1.2.1 Environmental Stress Crack Resistance **Pass**

Requirements: The environmental stress crack resistance of polyethylene for blow-molded and single-layer rotationally-molded tanks shall be as specified in Section 9.3.2.

7.1.2.2 Tensile Strength **Pass**

Requirements: When determined in accordance with ASTM D638, the tensile strength of polyethylene for blow-molded and single-layer rotationally-molded tanks shall be at least 16.5 MPa (2,400 psi).

7.1.2.3 Flexural Modulus of Elasticity **Pass**

Requirements: When determined in accordance with ASTM D790, the flexural modulus of elasticity of polyethylene for blow-molded and single-layer rotationally-molded tanks shall be at least 586 MPa (85,000 psi).

7.1.3 Wall Thickness **Pass**

Requirements: Wall thickness of blow-molded and single-layer rotationally-molded tank

(a) side walls, tops, bottoms, and covers shall be at least 6.3 mm (0.25 in);
(b) inlet and outlet ends shall be at least 6.3 mm (0.25 in); and
(c) internal walls (e.g., baffles and partitions) shall be at least 4.8 mm (0.19 in).

9 Testing Requirements and Performance Criteria

9.1 Watertightness Tests

Grease interceptors shall comply with one of the watertightness tests specified in Sections 9.1.2 to 9.1.4 of IAPMO/ ANSI Z1000.

IAPMO/ ANSI Z1000-2013, Sec. 9.1.2 Vacuum Test **Pass**

Requirements: There shall be no loss of vacuum pressure (2 psi [4 in of mercury]) during the 5 min test period.

IAPMO/ ANSI Z1000-2013, Sec. 9.1.3 Water Test **Pass**

Requirements: There shall be no visible leakage (When the specimen is filled with water to its maximum operating level and left too stand for 1 hour). Damp spots due to condensation on exterior surfaces shall not be cause for rejection.

IAPMO/ ANSI Z1000-2013, Sec. 9.1.4 Air Test **Pass**

Requirements: There shall be no air leakage (when pressurized to 3 psi). Continuous formation of bubbles at any location on the test specimen surface shall be evidence of air leakage.

10 Markings and Accompanying Literature **Pass**

Prefabricated gravity grease interceptors complying with this Standard shall be marked with the: Manufacturer's name or trademark; model number; working liquid volume, expressed at least in gallons; date (i.e., month and year), date code, or identifier traceable to the date of manufacture; maximum design load and maximum burial depth for which the grease interceptor is designed; and inlet and outlet.

Markings shall be permanent, legible, and visible.

*** END OF TEST REPORT ***