

MYTH VERSUS FACT

Setting the Record Straight on Grease Interceptors

False and misleading advertising has been causing confusion in the marketplace for grease interceptors. Here are the myths that have been distributed to the industry. And here are the facts.

MYTH

“For years and years many Michigan municipalities have allowed the use of large modified concrete “septic” tanks as grease interceptors. IAPMO recognized the short comings of concrete and established Standard IAPMO/ ANSI Z1001, which is now referenced in Section 1003.3.6 of the 2015 Michigan Plumbing Code.”

FACT

IAPMO Z1001 was not created to address the “shortcomings of concrete.” Back in 2005, the IAPMO Main Standards Committee formed a Subcommittee to develop a standard to evaluate products covered under the IAPMO PS-80 (Property Standard for grease interceptors and clarifiers). The Z1001 standard was developed to allow manufacturers freedom in design to manufacture products based on sound engineering practices to protect the health of the public. NPCA has been a participating member of the Z1001 Subcommittee since its beginning.

MYTH

“The current code in section 303.4 Third Party Certification, states that all plumbing products shall be listed by a third party certification agency as complying with the referenced standards. This is where most if not all (I have not been able to find a concrete product that has this 3rd party certification) concrete grease interceptors fail to meet the code.”

FACT

The NPCA Plant Certification Program holds an accreditation from American National Standards Institute (ANSI) and meets the requirements of ISO/IEC 17065:2012 Conformity assessment – Requirements for bodies certifying products, processes and services. This assures you that our certified plants are required to maintain strict adherence to the best practices set forth in the NPCA Quality Control Manual for Precast Concrete Plants (available for download at: precast.org/certify). The NPCA program uses two independent ISO/IEC 17020 accredited inspection firms to perform annual unannounced plant inspections.

Section 303.4 does not exist in the current UPC (Uniform Plumbing Code). The Section 303.4 that is referred to in the email is taken from the 2006 IPC (International Plumbing Code). Table 303.4 of the same code lists those products and materials requiring third-party testing and third-party certification. Gravity grease interceptors are not included in the table. The current 2015 IPC provides guidance regarding gravity grease interceptors in Section 1003.3.6 of the code.

MYTH

“By referencing the above Plumbing Code Sections, installation of a 500 gallon or larger modified concrete septic tank for use as a gravity grease interceptor is not being tolerated.”

FACT

The Z1001 standard points to the ASTM C1613 standard for precast concrete gravity grease interceptors for materials and manufacture only and covers structural strength under section 4.3 for all tanks. These structural requirements are the same as those noted in the IAPMO/ANSI Z1000 “Prefabricated Septic Tanks.” The 2015 IPC code under section 1003.3.6 points to the Z1001 standard for design.

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“Many cities have learned that concrete units can quickly deteriorate, even if epoxy coated as recommend by the Portland Cement Association. Many failures have been attributed to the fact that concrete has not been a material that performs well in corrosive environments. The ph inside a grease interceptor is acidic (high ph), concrete is made up of calcium hydroxide, traditionally called slaked lime, a high ph.”

FACT

This reference to concrete quickly deteriorating is highly speculative and is not based on facts. Precast concrete has been the primary material for gravity grease interceptors for decades and the vast majority offer a long service life, while withstanding the loads from not only the strength of the wastewater but also traffic and soils. Precast concrete’s density makes it very resistant to buoyancy, which is imperative in high water table situations. Buoyancy can be a major issue with lighter materials.

Precast concrete is made to be watertight and durable. Concrete is used in skyscrapers, parking garages, retaining walls, bridges and wastewater treatment plants that are exposed to all types of extreme weather and loading. These products are also exposed to sulfates, chlorides and sometimes acids. While prolonged exposure to strong acids may damage the concrete, the time of exposure would have to be very lengthy and the degree of acidity would need to extend well beyond most types of FOG-laden wastewater. If a tank suffers premature deterioration, it is much more likely to be a maintenance or quality issue, which is why buyers should put in place a proper maintenance schedule and choose suppliers that have robust quality control programs and are certified through a stringent process such as the NPCA Plant Certification Program.

MYTH

“Other issues include many failures due to the porous concrete environment harboring bacteria, creating hydrogen sulfide and sulfuric acid, piping being done in the field and poorly installed covers, resulting in ground water infiltration.”

FACT

A properly proportioned precast concrete mix design using quality materials and a low water-to-cementitious ratio will exhibit high strength, low porosity, and produce a concrete that is practically impermeable. Proper concrete curing is the last step to ensure a high-quality precast product. The resulting high density and strength is the key to durability in the face of aggressive agents. The claim of “porous concrete harboring bacteria-creating hydrogen sulfide and sulfuric acid” is scientifically incorrect. The bacteria to which the claim refers can form only when the concrete pH is below 9. Concrete pH is typically above 12.5. Also, bacteria does not create hydrogen sulfide. Hydrogen sulfide is naturally present in most wastewater and can be released due to turbulence. That is why precast concrete grease interceptors are designed to maintain a quiescent environment to minimize H²S generation.

Precast concrete grease interceptors made in compliance with the requirements of the NPCA Quality Control program and ASTM C1613, “Standard Specification for Precast Concrete Grease Interceptor Tanks,” are required to have flexible connectors for pipe, which provides a watertight seal.

As for improperly installed covers, precast concrete grease interceptors are manufactured with watertight risers and access covers to not only prevent infiltration, but also to provide a strong and durable access that will not cave in or deteriorate. Alternative materials may buckle under soil loading, which can alter the shape of the access hole and make it very difficult to remove and replace the access cover, leading to leaks and potential accidents.