OHIO PRECAST CONCRETE ASSOCIATION

eNewsletter

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Inside this issue:

Construction in Ohio

If you've driven on the highways around the state this summer, you know first hand that the construction season is in full swing. Gov. Kasich's *Ohio Jobs and Transportation Plan* has fueled the $2.5 billion dollar construction season. The revenue generated by unlocking the potential of the Ohio Turnpike has accelerated many long over due projects. For a complete overview of the projects planned, visit the ODOT website: http://www.dot.state.oh.us/Services/RoadConstruction/Pages/Construction2014.aspx

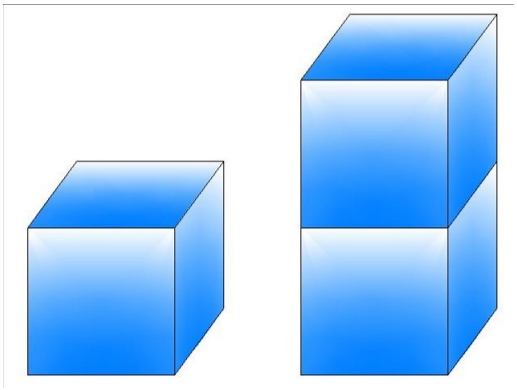
The new sewage rules, passed in 2007 were rescinded. Since then, The Ohio Department of Health has revised the rules which have made their way through the draft and comment stages over the past two years. The new rules as drafted are set to take effect on January 1, 2015. The draft rules can be found on the OPCA website under the links tab, or by clicking HERE.

ODH has a presentation on the website which summarizes the reason for the changes, and also provides information on the effect the rules will have on stakeholders. The presentation can be viewed by clicking HERE.

The Ohio Precast Concrete Association has been represented well throughout the rules process. Howard Wingert and Bob Shank are to be commended for the time and attention they have given as representatives of the precast concrete producers in Ohio.

What is buoyancy, and how does it affect concrete septic tanks?

Concrete is a very heavy material weighing around 150 pounds per cubic foot. The specific weight makes concrete 2.4 times the weight of water. In a pool of water, a solid concrete block would sink. So if concrete cannot float in water, then why is it such a problem to water test a septic tank by filling the vessel well into the riser? The answer requires a lesson in buoyancy.

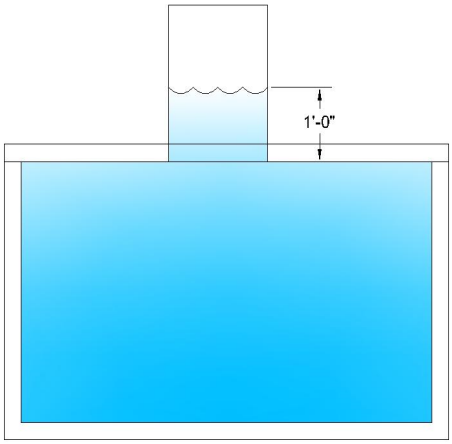


Water has a specific weight of 62.4 pounds per cubic foot. Consider that a cube of water filled an area of exactly 12" x 12" x 12". The area at the base would be 144 in^2. The force exerted by the cube of water on its base is 0.433 psi. A second cube of the same size and volume stacked on the first would double the force applied on the base. In addition, a lateral force, a force exerted sideways, would also exist. The lateral force is equal to the force in psi at the base, and it reduced to 0 at the top of the base.

The Archimedes Principle states: The buoyant force is equal to the weight of the displaced water.

To illustrate this, if a concrete test cylinder measuring 4" in diameter x 8" in height were dropped into the one cubic foot of water, the amount of water displaced would be 100.5 in^3. The weight of the water displaced would be about 3.6 pounds. Since the weight of the concrete cylinder is about 8.7 pounds, the cylinder would not float, but it now has a weight of about 5.1 pound (8.7 - 3.6). If the test cylinder form was "pushed" into the water, the same amount of displacement of water would occur. The only difference is that the test mold is significantly lighter than the water that would be displaced, so it will float.

Another principle that is important to know is that water in a pipe exerts the same force per square inch at the base regardless of the diameter of the pipe. In a septic tank with a riser, the riser becomes the pipe. If water is filled into the riser to a level that is 1' above the bottom of the concrete tank lid, the lid will "displace" a volume of water equal to the contact surface area of the bottom of the lid multiplied by the height of the water in the pipe above the bottom of the lid. Assume that a concrete lid has an inside area of 40 ft^2 without subtracting the area of the riser. The riser is 18" in diameter (1.77 ft^2). The net surface area displacing the water is 38.23 ft^2. The volume of water displaced per foot of water in the riser is (38.23 x 1 = 38.23 ft^3). The weight of the water displaced is (38.23 x 62.4 = 2,385.5 pounds). The buoyant force "lifting" the lid is almost 2,400 pounds. A 4" thick concrete lid of this size weighs less than 2,000 pounds. The buoyant force is greater than the mass of the concrete lid, therefore the concrete lid would float.



OSHA—Crane Operator Certification: What is the status?

Since early 2012, the National Precast Concrete Association (NPCA) has been lobbying the Occupational Safety and Health Administration (OSHA) on the new crane operator certification. The premise behind their argument is that a boom crane off loading typical precast components does not have the same risk as a 100 ton crane, and therefore the knowledge and skill required is also not the same. A task group consisting of seven producer members of NPCA presented their case to NCCCO who agreed to seek a resolution. As a result, two new certifications for boom trucks, one for swing controls and one for fixed controls, will be developed.

Background:

> *The U.S. Occupational Safety and Health Administration (OSHA) established a new rule on crane safety in 2010, but its new standard on cranes in construction has been in development for a long time. The previous standard was adopted in 1971, and OSHA has been working on a new rule since 1998.*
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> *From 2002 to 2004, an OSHA committee of safety and industry professionals reached a consensus on a new rule. In October 2008, OSHA issued a proposed rule based upon the committee's work. After public comments and hearings, OSHA published its final rule Aug. 9, 2010, with its provisions that were to take effect Nov. 8, 2010. A four-year compliance period was added in the provisions for the crane operator certification/qualification requirement, meaning that employers were instructed to be in compliance by Nov. 8, 2014.*
>
> *OSHA once again proposed a rule Feb. 7, 2014, to extend the compliance date for the crane operator certification requirement by three years to Nov. 10, 2017. The proposal would also extend to the same date the existing phase-in requirement that employers ensure that their operators are qualified to operate the equipment.*
>
> *Boom truck operators were given a three-year extension when OSHA delayed its certification deadline to 2017, but this doesn't mean all state agencies are waiting until 2017 to require that boom truck operators pass a certification exam. If you're working at a plant in California, for example, you need to be certified by an accredited testing agency right now. Other states have different requirements, setting up a patchwork of regulation between now and 2017.*

A May-June 2014 article in Precast, Inc. covered this topic in more detail. This article can be viewed online by visiting the NPCA website: http://precast.org/2014/06/fishing-changes/

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We're on the web!
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OUR PURPOSE

The Ohio Precast Concrete Association (OPCA) is a group of producer members and associated industries cooperating together as an association. The intent being to bring pertinent issues and information that impact the Precast Concrete Industry, to the attention of government agencies which participate in the origination of these issues.

The OPCA is interested in assisting these agencies by providing expert advice and counsel in the development of regulations involving the industry and the general public.

The OPCA producer and associate members whose products and services range from the construction of buildings and highways to the manufacture of precast concrete products for the treatment of commercial and residential waste water. The OPCA member products and services affect the lives of nearly every Ohioan on a daily basis.

Some specific areas of interest being pursued by the OPCA are as follows:

- The introduction of new sewage guidelines relating to the specific construction and operation of home waste water treatment products (septic tanks, aerators, etc.) by the Ohio department of health and the Ohio EPA.
- The introduction of programs and policies relating to the testing of materials and products being used on Ohio Department of Transportation projects.
- The development of quality control procedures and inspections services training by the Ohio Department of Transportation.

The Ohio Precast Concrete Association will be expanding its' scope of interest as membership roles grow and diversify. The need for input, regarding issues and regulations which effect the large segment of the public which it serves, comes to the forefront.

OPCA Member Companies

PRODUCER MEMBERS

E.C. Babbert, Inc.

Everly Concrete Products, Inc.

Hanson Pipe and Precast

J.K. Precast, LLC

Lindsay Precast

Mack Industries

Norwalk Concrete Industries

Premier Precast Products

Quaker City Septic Tanks, LLC

Scioto Valley Precast

Sickels Septic Tanks, Inc.

Spoerr Precast Concrete, Inc.

Stiger Precast, Inc.

Uniontown Septic Tank, Inc.

United Precast, Inc.

ASSOCIATE MEMBERS

A-lok Products, Inc.

A.L. Patterson, Inc.

Blackthorn, LLC

Champion Pump Company

Concrete Sealants, Inc.

EJ USA, Inc.

EMH, Inc.

Engineered Wire Products, Inc.

Essroc Cement Co.

Euclid Chemical

Gotham Staple Co., Inc.

Hamilton Kent, LLC

Hill and Griffith Company

Infiltrator Systems, Inc.

Jet, Inc.

Mixer Systems, Inc.

Ohio Electric Control, Inc.

Polylok, Inc. / Zabel Envronmental

Premiere Concrete Admixtures, LLC

Press-Seal Gasket Corporation

Sika Corporation

St. Mary's Cement

Tuf-Tite, Inc.

W.P. Hilts & Company

PROFESSIONAL MEMBERS

Concrete Engineering Solutions

Delta Engineers, Architects & Land Surveyors