Summer 2022

OHIO PRECAST CONCRETE ASSOCIATION

The Precast Publication

Special points of interest:

News from NPCA...

White House Awarding $1 Billion in Airport Projects

The U.S. Federal Aviation Administration will soon begin awarding $1 billion in contracts to repair and improve terminals at 85 airports across the United States.

The funding is part of the 2021 bipartisan Infrastructure Investment and Jobs Act and the first round of a five-year plan within the Airport Terminal Program. Another $5 billion is expected for air traffic facilities and $15 billion for aviation infrastructure.

The FAA said in its press release announcing the funding that it is prioritizing projects that can be "implemented quickly, demonstrate strong labor standards and use renewable construction materials," offering opportunities for precast concrete.

Among the airports targeted for funding are Phoenix, Austin, Pittsburgh, Dallas-Fort Worth, Orlando and Denver.

Precast concrete products are used for a variety of applications at airports. Some include control towers, parking structures, terminals, ramps, tarmacs, pavement, runways and ancillary structures.

U.S. Manufacturing Jobs Recover to Pre-pandemic Level

The U.S. Labor Department reported last week that U.S. manufacturing jobs rose by 29,000 in June, pushing the number of American employed in the manufacturing industry ahead of 2020 pre-pandemic levels.

Demand for manufactured goods has slowed through the summer, but the Alliance for American Manufacturing reports that U.S. companies continue to expand domestically to overcome foreign supply chain issues and the backlog of orders remains robust to keep lines moving.

Finding and retaining workers remains a struggle for many companies, however, including the precast concrete industry. NPCA's Onboarding Program is designed to assist in this area. Learn more about strategies for worker retention and how to successfully build and maintain a workforce in the latest episode of NPCA's Breaking the Mold podcast.

Australians Use Disposable Coffee Cups as Substitute for Sand in Concrete

Engineers at Victoria University in Melbourne, Australia, are turning the waste from their morning routines into aggregate that can be used to make concrete.

"Coffee and concrete are two things I really

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From the Desk of the President...

Greetings fellow OPCA members,

2022 has shown the concrete industry that the demand is still there and so many of us are extremely busy! It is a great time to be in the industry and I am excited to see what the future looks like!

Since the last newsletter, the Ohio Precast Concrete Association has changed administrations and the transition has been smooth! Please note that there the phone line and email address for the association remains the same, however the mailing address has changed. Please change the mailing address to 6870 Licking Valley Road, Frazeysburg, OH 43822 to ensure that OPCA information gets to the correct location!

The Precast Show 2023 is going to be in Columbus on February 23-25 and OPCA is looking for volunteers. We are planning on having a booth at the event and would love to have those in the industry man the booth and assist with it. If you are interested in helping with this, please contact an OPCA board member or the office today!

If you are looking for some educational opportunities, NPCA is hosting some webinars on the following topics on the following dates.

- 5 Keys to Watertight Precast Concrete Septic Tanks: Aug. 25 Noon – 1:30 p.m. ET
- New and Amazing Technologies in Precast Concrete Manufacturing and Applications: Sept. 15 Noon – 2:00 p.m. ET
- Precast Concrete Sanitary and Stormwater Structures – The Significance of Meeting Applicable Standards: Oct. 27 Noon – 2:00 p.m. ET

Finally, the OPCA board of directors is looking for advertisers in the quarterly newsletter. If you are interested in learning more about adverting with OPCA, please contact the OPCA office today!

Plans are in the works for an upcoming training and I hope that we are able to share more information soon!

Thanks,

Dean

Dean Wolosiansky, Lindsay Precast

Unlocking New Revenue Through Low Carbon Concrete ...

Concrete producers across North America are finding success by being the low carbon concrete supplier in their area. Not only is it helping them stand out and win sustainable projects, some low carbon concrete mixes with CarbonCure are actually generating carbon credits, which means producers are getting paid to put CO2 into their concrete.

Whether you're looking to reduce material costs without impacting quality, discover new market opportunities, gain a competitive advantage, or deliver more sustainable precast products, here are three ways precast producers can profit from sustainability:

Reduce cement costs
Cement is the most expensive ingredient in precast concrete mixes. By reducing its use, concrete producers can lower production costs and increase profits. Modern material technologies and mix designs such as SCMs, PLC, and carbon mineralization technology can decrease the quantity of cement used without impacting early age strength or release time.

Differentiate from your competitors
The growing demand for sustainable and low carbon building options is transforming the precast concrete industry. Various governmental bodies and industries are working to reduce the CO2 produced in construction. Producers that take the lead on adopting these innovations will be better prepared for new regulations and can position sustainability as a competitive advantage in order to compete for greater market share.

Cash in on carbon credits
Some of the world's biggest organizations —like Microsoft, Amazon, Shopify, and General Motors—want to encourage the world to build with lower carbon concrete. They expect producers to store CO2 and reduce the amount of cement in their mixes - and they're willing to pay to make it happen.

CarbonCure producer partners receive regular checks for the amount of carbon they've saved by putting CO2 in their mixes and reducing the amount of cement in their concrete. Have questions about CarbonCure? Reach out to Marlene Hecker, Precast Senior Account Executive at mhecker@carboncure.com or +1 (604) 961-8811.

CARBON CURE™

Current episodes include:

- Introducing NPCA's Breaking the Mold Podcast
- Episode 1 - Precast Concrete vs Alternative Materials
- Episode 2 - Onboarding and Training Go Beyond Day 1

More information can be found online at https://precast.org/podcast/. You can listen to the podcast on Spotify, Apple Podcasts, and Google Podcasts

Hot Weather Concreting Tips...

Summer is finally here. The days are long and hot; weekends are busy with barbeques, kids' sports games, and yard work; and the scent of sunscreen is in the air. One important thing to remember during this time of year though, is that our skin isn't the only thing that needs protection in the hot summer sun. Concrete does, too.

Whether your facility conducts concrete production, placement, and curing indoors, outside, or does a mix of both, it's important to follow hot weather concreting precautions during these summer months – and any time of year the conditions require it.

The American Concrete Institute (ACI) defines hot weather concreting as, "One or a combination of the following conditions that tends to impair the quality of freshly mixed or hardened concrete by accelerating the rate of moisture loss and rate of cement hydration, or otherwise causing detrimental results: high ambient temperature, high concrete temperature, low relative humidity, and high wind speed."

High ambient temperatures and high concrete temperatures cause cement hydration reactions to occur at an expedited rate, which may sound beneficial, but we could have too much of a good thing. The higher the ambient and concrete temperatures are, the faster cement hydration reactions occur, the faster the concrete sets, and the faster concrete gains early-age strength. As a general rule of thumb, the faster the early-age strength gain occurs, the lower the concrete's long-term strength will be. Slow and steady strength gain tends to win the race. Additionally, concrete temperatures that exceed 150 degrees Fahrenheit could experience delayed ettringite formation (DEF), which leads to irreparable internal expansion and cracking.

Low relative humidity can cause the mix water and bleed water to evaporate too quickly, and lead to plastic shrinkage cracks on the concrete's unformed surfaces. Wind, or even breezes, and direct exposure to sunlight can also contribute to extreme moisture loss and cracking.

ACI 305, "Guide to Hot Weather Concreting," sets forth recommendations for how to best protect concrete from adverse effects of hot weather, low humidity, wind, and sun exposure. Recommendations to help maintain optimal concrete temperatures and ideal curing conditions include:

- Apply light-colored plastic sheeting and/or moist burlap sheeting over forms while concrete cures. This helps retain moisture and protects the products from wind, sunlight, and quick moisture evaporation.
- Use ice in the mix water or chill the mix water to help keep the concrete temperatures reasonably low.
- Store aggregates indoors or out of direct sunlight, and/or routinely sprinkle aggregate stockpiles with water throughout the day. Hot aggregates can increase the fresh concrete temperature and can cause very fast cement hydration in the area immediately surrounding the aggregate. Very dry aggregates can absorb quite a bit of mix water and significantly impact the mix's water to cement ratio.
- Keep forms covered or otherwise protected from direct sun exposure prior to casting. Hot forms can expedite cement hydration and setting.
- Adjust mix designs as needed by incorporating retarders or pozzolanic supplementary cementitious materials as appropriate to reduce heat of hydration and set time.

You might be surprised by how many days count as hot weather concreting days here in Ohio. Weather in September and even into October can be warm and dry enough to require these hot weather precautions.

"Interestingly, the Fall and Spring can be the worst times because the dew point is so low that the min-max temperature swing throughout the day is so drastic," said Sam Lines, engineering manager at Concrete Sealants.

Be sure to monitor the day's temperature and regularly check the fresh concrete's temperature to ensure proper conditions. Also be sure to check aggregate moisture contents regularly and adjust mix water accordingly. Most importantly, make sure your plant has a complete, documented hot weather concreting plan in place and that everyone involved knows what to do – and when – to protect your concrete.

PRECAST DAYS 2022

Join manufacturers from across the United States as we showcase modern precasting and celebrate our industry. Precast Days provides an opportunity for you to host a variety of events and make valuable local connections. Build relationships with business partners, specifiers, your local community and the next generation workforce.

Celebrate your company & employees

Create new business relationships

Grow your workforce today and beyond

Connect with your local community

To get involved, visit Precast.org/PrecastDays

News from NPCA...

love," Dr. Yanni Bouras, a lecturer at the College of Engineering and Science, told CreateDigital.org. "A few of us met up at a cafe to explore options for waste materials. We ended up looking down at our cups and thinking, 'Why not?'"

Bouras' group tested a range of waste materials, including used mattresses and cardboard. In 2020, the group turned to disposable coffee cups, which as it turns out have all the properties they were looking for.

Austrians throw away more than 2.7 million disposable coffee cups a day on average. That number grows to 105 million per day in the United States. While the plastic lids are recyclable, the cups typically are made from a paperboard product that includes a low-density polyethylene layer. That layer prevents the cups from being compostable or easily recycled.

Sand is a common aggregate ingredient in concrete, along with cement, water and admixtures.

With the growing worldwide sand shortage, researchers around the world are seeking alternatives that not just allow concrete to retain its strength and resiliency as a building material but also help lower waste in order to move toward a more sustainable future.

"Our coffee cup concrete mix will not only reduce the demand for mined sand, it also reuses a common waste material and reduces the amount of carbon emissions in the production process," Bouras told CreateDigital.org. "The thermal and sustainable properties of our concrete mix make it a suitable solution for industry across a range of applications."

Articles Provided by the NPCA Blog

NPCA
Precast ... The Concrete Solution

OPCA Purpose....

The Ohio Precast Concrete Association (OPCA) is a group of producer members and associated industries cooperating together as an association. The intent is 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' products and services range from the construction of buildings and highways to the manufacture of precast concrete products for utilities, rainwater runoff management, and 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 pursued by the OPCA are as follows:

- Monitoring 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. Three committees are accepting new participants: Education Task Group, Regulatory & Professional, and Membership Growth, Retention & Engagement. Interested members should contact an OPCA Board Member or send an email message to info@ohioprecast.org


THE
PRECAST
SHOW
2023
SAVE THE DATE
The Precast Show 2023
Feb. 23 – 25 in Columbus, Ohio
Look for more information this fall at
ThePrecastShow.org
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