MIT Video Explores Sustainable Roads

Two student researchers at the Massachusetts Institute of Technology (MIT) have created a video about the MIT Concrete Sustainability Hub's findings for designing pavements that reduce fuel consumption and greenhouse gas emissions.

The team produced the video as part of an initiative to build awareness of the value of engineering. To celebrate its 50th anniversary, the National Academy of Engineering created a video contest to honor engineering contributions to past, current, and future needs of society.

The entry by recent MIT graduate Maria Cassidy and graduate student Mehdi Akbarian explores how to use engineering models to design stiffer pavements that can achieve up to 3 percent better gas mileage.

By reducing rolling resistance, road stiffness has a measurable effect on vehicle fuel consumption. That impact is significant over time and essential to the analysis of the lifetime environmental impacts of roads.

Beyond the competition, the students hope the video will create interest in sustainable infrastructure by high school and undergraduate students. The grand prize of $25,000 will be announced at the end of September.

More at Think Harder. Blog

Six CEMEX Plants Earn ENERGY STAR Certification

CEMEX USA announced today that six of its cement manufacturing plants have earned the U.S. Environmental Protection Agency ENERGY STAR® certification. The recognition of CEMEX USA’s plants in Brooksville, Florida, Miami, Florida, Clinchfield, Georgia, Fairborn, Ohio, Louisville, Kentucky, and Victorville, California, demonstrates that these facilities perform among the top 25 percent of similar U.S. facilities for energy conservation.

2014 marks the eighth consecutive year of certification for the Clinchfield plant, an achievement realized by only one other cement plant in the U.S., the fourth consecutive certification for the Miami plant, the third for the Brooksville, Victorville, and Fairborn, plants and sixth year for the Louisville plant.

Throughout the year, all of the recognized plants put into practice the energy efficiency principles established by the ENERGY STAR Guidelines for Energy Management developed by EPA. These plants implemented energy conservation and monitoring technologies, promoted energy efficiency awareness among employees, and completed energy reduction projects.

"CEMEX is committed to sustainable practices throughout our operations, including energy efficiency," said Karl Watson Jr., president of CEMEX USA. "We are honored to again be recognized by the EPA and Energy Star for our commitment to sustainable practices."
Congress Completes Work on HTF Patch – With the Highway Trust Fund (HTF) only hours away from having insufficient funds to reimburse states, Congress completed work on a short-term patch late last week. Weeks ago, the House overwhelmingly passed legislation – endorsed by PCA - that provided the HTF with nearly $11 billion in funding and reauthorized the Moving Ahead for Progress in the 21st Century (MAP-21) Act through May 2015. During the Senate’s consideration of the bill, lawmakers passed an amendment offered by Environment & Public Works Committee Chairwoman Barbara Boxer (D-CA) to shorten the reauthorization to December. Boxer hoped the inclusion of this amendment would force both chambers to advance a long-term surface transportation bill before the conclusion of the 113th Congress. Senators also voted to replace the House’s framework with the financing structure favored by Finance Committee Chairman Ron Wyden (D-OR). Both amendments were soundly rejected by the House and the bill – in its original form – was returned to the Senate for further consideration. Acknowledging the looming deadline, the Senate passed the legislation on July 31 with only hours to spare. Although President Obama has yet to sign the legislation, reimbursements to state Departments of Transportation have continued to be distributed.

Contact Collin Long

PCA Continues Climate Resilience Outreach – Following up on the U.S. Conference of Mayors meeting in Dallas in late June, PCA staff and member companies are presenting information related to MIT’s research on life-cycle analysis and the benefits of resilient buildings to local and state officials participating in the President’s Climate Task Force. The 24-member task force works in conjunction with the Administration’s Council on Climate Resilience and is charged with developing recommendations on how to mitigate the impacts of climate change. On August 8, PCA shared insights on resilient buildings with staff from Houston Mayor Parker’s office. On August 18, cement manufacturers will meet with staff in the office of Governor O’Malley to discuss resiliency.

Contact Bryan Brendle

PCA To Host District Meetings - PCA will host two district meetings with federal legislators during Congress’s August recess. On August 13, Rep. Nick Rahall (D-WV), ranking member of the House Transportation & Infrastructure Committee and an active member of the Cement Caucus, will meet with PCA representatives in Huntington, West Virginia. Additionally, Rep. Steve Daines (R-MT) will tour Ash Grove’s Montana City facility on August 19. Daines is heavily favored to win the state’s Senate race, particularly in light of sitting Sen. John Walsh’s (D-MT) recent decision to suspend his campaign amid accusations that he plagiarized large portions of a final paper while attending the U.S. Army War College in Pennsylvania. Should Daines prevail – he is currently considered a heavy favorite - he will be the first Republican to hold the seat in more than 100 years.

Contact Mary Holland

Market Intelligence

U.S. Cement Consumption Increases in 2013

According to PCA’s 2013 Apparent Use of Portland Cement, State & Market Report, overall cement consumption growth reached 4.3 percent in 2013, which was driven by residential and nonresidential buildings (10.5 and 15.9 percent, respectively). The public sector was a drag, decreasing 1.4 percent from 2012.

The report includes detailed consumption patterns and estimates portland cement consumption in 46 construction classifications for 56 state and partial-state geographic areas.

PCA revised its Apparent Use model in order to more accurately estimate the use of cement by construction sector. The results reflect a more balanced cement market, with modest reductions in public and residential construction, a larger nonresidential market, and structural changes in the composition of sub-sectors.

Contact: Brian Schmidt or Joe Chiappe
Concrete Producer Finds the Right RCC Mix for Technical School

Roller-compacted concrete's (RCC) durability and cost-savings made it the pavement of choice for the new Marion County Regional Institute of Technical Excellence parking lot in Kimball, Tennessee.

Using a innovative delivery system, the 1,500 cubic yard job was successfully completed in five days. The crew did not discharge the RCC directly from a ready mix truck into dump trucks that would deliver it, as is typically done for RCC jobs. Rather, the concrete was discharged onto a concrete slab and the contractor used a front-end loader to load the dump trucks. While the front-end loader filled the dump trucks, the ready mix trucks refilled the RCC pile with 50 to 60 cubic yards of material. The process prevented running out of material and there was little segregation because a well-graded material was used with the maximum size aggregate being only ½-inches when the proper mix was used.

Learn more at Think Harder. Blog

Two Must-Have PCA Publications Offered for Free

PCA's Simplified Design of Concrete Buildings (EB204) and Notes on ACI 318 Building Code Requirements for Structural Concrete with Design Applications (EB712) are now available at no charge as electronic PDFs.

With expanded illustrations, sustainability information, and timesaving design aids which include high-strength concrete, these publications are invaluable to the industry. Equations, design aids, graphs, and code requirements have been updated and revised to ACI 318-11.

Both publications present timesaving analysis, design, and “how to” methods for construction of reinforced concrete buildings.

Order at www.cement.org