

Products & Practice

Honda Autonomous Work Vehicle

Honda's latest generation of its prototype, Honda Autonomous Work Vehicle (AWV), helps to improve worksite efficiencies. The fully programmable all-electric Honda AWV leverages the company's emerging advanced autonomous technology to create a rugged off-road work vehicle designed to support construction-related activities and enhance workforce productivity. With the ability to operate autonomously, or manually with a remote control, the Honda AWV can provide a wide range of services to industries that need autonomous operation or delivery solutions, especially where workforce constraints make other solutions impractical. The company is also exploring the development of attachments and tools that could make the vehicle a suitable platform for many work environments.

The Honda AWV employs a suite of sensors to operate autonomously, using GPS for location, radar and lidar for obstacle detection, and cameras for remote monitoring. Previous field tests have also successfully verified that multiple Honda AWVs can transport and deliver construction materials and supplies at precise points along a pre-set route. The vehicle leverages Honda's portfolio of mobility technologies, using common components from its automobiles and other products.

—Honda, www.honda.com



Hybrid Reality Capture

FARO Technologies, Inc., a provider of four-dimensional (4-D) digital reality solutions, released Hybrid Reality Capture™, powered by Flash Technology™. This solution delivers faster scanning for large-volume projects in architecture, engineering, construction, and public safety applications. Accessed through FARO's advanced workflows, Hybrid Reality Capture is the newest scan mode for Focus Premium Laser Scanner users. It combines the accuracy of a static three-dimensional (3-D) laser scanner with the speed of a panoramic camera. The unique combination of fast scans with colorized 360-degree images improves scanning speed by 100%, so customers can complete projects faster without increasing costs. Accessed through Sphere, FARO's cloud-based information platform, the solution is ideal for architecture, engineering, and construction companies taking large-volume 3-D reality capture scans.

—FARO Technologies, www.faro.com



WorkOn

BoomNation is improving the skilled-worker journey with the launch of its newest technology, WorkOn. WorkOn focuses on project-based solutions that are easily accessed and used to build project culture and improve worker retention.

Powered by BoomNation, WorkOn enables real-time information to answer the most asked questions. The technology allows employers the ability to create company cards, providing skilled workers with vital information about their jobs. That information includes GPS directions, contacts, site-specific information, emergency contacts, orientation videos, texts and links, and real-time updates.

—BoomNation, www.boomnation.com



Products & Practice

PPG FLOORING Concrete Coatings

PPG expanded its PPG FLOORING™ concrete coatings line. The expanded range comprises integrated systems of primers, bases, and topcoats for environments that require electrostatic protection, for equipment mechanical rooms, and for applications where a combination of high performance and ultra-fast return to service is essential. These new options expand on PPG's existing flooring coatings systems—general purpose, wear-resistant, chemical-resistant, and urethane cement—which also deliver specific benefits such as resistance to impact, abrasion, and certain chemicals.

—PPG Flooring, www.ppgpmc.com



All-Purpose Adhesive & Filler

The new concrete line of products from DAP, a manufacturer in the home improvement and construction products industry, features its All-Purpose Adhesive & Filler.

An all-in-one total project solution, All-Purpose Adhesive & Filler is formulated to build, bond, and repair many exterior home projects. From patching brick walls, mending concrete or stone walkways and concrete stair cracks, to repairing rotted wood and adhering underwater ceramic pool tiles, the new All-Purpose Adhesive & Filler 3-in-1 is a multipurpose adhesive and filler solution. The moldable formula has an extended working time of 20 minutes to recreate and perfect any broken corners with ease. The 3-in-1 filler is waterproof and rain-ready immediately.

—DAP Global Inc., www.dap.com



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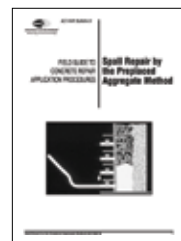


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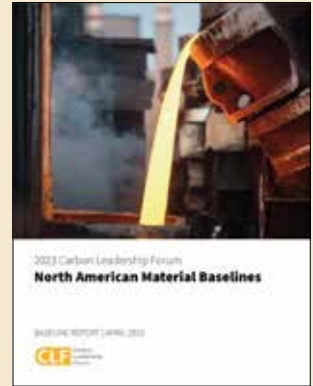
Products & Service Literature & Videos

2023 Carbon Leadership Forum: North American Material Baselines by Carbon Leadership Forum

The Carbon Leadership Forum (CLF) Baseline values represent an estimate of industry-average greenhouse gas (GHG) emissions for construction materials manufactured in North America. A majority of the CLF Baselines published in this report are based on a North American, industry-wide Environmental Product Declaration (EPD) if one was available at the time of publication. As such, it is appropriate to use this number as a rough estimate of a product type's embodied carbon before a specific product has been selected or as a reference value against which product-level comparisons can be made.

Each material category has a detailed Appendix that includes a description of the embodied carbon impacts, the available EPDs, and summary statistics. The Appendixes in this report allow users to better understand the availability of existing industry-wide and product EPDs, and the variability of product types across a category. The snapshot of available EPDs summarized in each Appendix was assembled using the EC3 database in Fall 2022.

—Carbon Leadership Forum, www.carbonleadershipforum.org



Environmental Product Declaration: Product Specific Type III EPD, Fiber Reinforcement Products for Concrete by The Euclid Chemical Company

The Euclid Chemical Company, a manufacturer of concrete and masonry construction products, completed its first Environmental Product Declaration (EPD) for four microfibers and one macrofiber used as concrete reinforcement.

PSI Fiberstrand Multi-Mix 80, PSI Fiberstrand 100, PSI Fiberstrand 150, PSI Fiberstrand F, and Tuf-Strand SF, manufactured at the LaFayette, GA, USA-facility, were analyzed for the report. The EPD helps quantify the environmental savings or “footprint” that can result when using or converting traditional steel reinforcement to Euclid Chemical’s synthetic fibers.

—The Euclid Chemical Company, www.euclidchemical.com

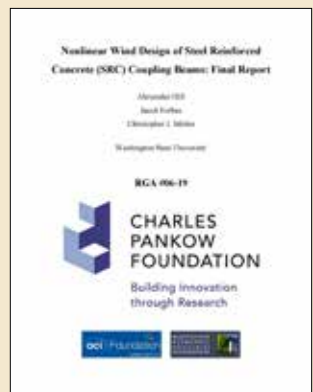


Nonlinear Wind Design of Steel Reinforced Concrete (SRC) Coupling Beams: Final Report by Alexander Hill, Jacob Forbes, and Christopher J. Motter

Structures are typically designed to yield and sustain damage in a controlled manner during design-level earthquakes. In this study, four steel-reinforced concrete (SRC) coupling beams, with steel sections embedded into a reinforced concrete wall, were tested quasi-statically under fully reversed cyclic wind demands with peak beam deformation of three times the yield rotation. The beams and walls were designed in accordance with seismic provisions in AISC 341-22, Section H5, and the walls were compliant with ACI 318-19, Section 18.10.6.5.

During each test, the wall was subjected to constant axial gravity load and fully reversed-cyclic lateral loading that was linearly proportional to the load in the test beam. The ratio of wall shear to beam shear was constant for the four tests, while the wall moment at the height of the coupling beam produced by the applied wall demands was the same for three tests and was larger by a factor of 2.0 for one of the tests with wall reinforcement compliant with AISC 341-22, Section H5.

—Charles Pankow Foundation, www.pankowfoundation.org



Product Showcase

Placing, Finishing & Testing Tools

SmartRock Pro

Giatic®[®], a provider of concrete testing technologies, announced SmartRock®[®] Pro. With the SmartRock Pro's self-calibrating feature, users can tag the sensor and install it to begin monitoring concrete strength in real time, saving projects multiple days per placement. This sensor determines concrete strength using multiple advanced sensing methods without requiring manual input. Secured to the reinforcing bar, the sensor is fully embedded, making it maintenance- and hassle-free. Furthermore, with concrete being delivered to the jobsite with very little visibility into the variability of the mixture from truck to truck, these self-calibrating sensors will now measure accurate concrete strength independently of the concrete being received.



The addition of self-calibrating concrete strength monitoring sensors to Giatic's existing artificial intelligence (AI) solutions provides general contractors and concrete producers with a solution ecosystem that cuts cost, saves time, and produces less waste from break tests while reducing greenhouse gas (GHG) emissions resulting from concrete production.

—Giatic Scientific Inc., www.giatecscientific.com

Hycrete Endure Cure

Hycrete Endure Cure is a multipurpose concrete curing and finishing aid for flatwork, providing immediate and long-term benefits. This specially formulated water-based product provides efficient moisture retention and curing on freshly placed concrete. Its advanced hydrophobic and pore-blocking chemistry helps produce a more dense concrete surface. Endure Cure improves the durability of the concrete by reducing absorption; thus, fewer chlorides can penetrate the concrete. It can also provide enhanced protection from corrosion and can be used for both above- and below-grade construction.



—Hycrete, www.hycrete.com

SOVA Model Guniting Machine

REED's SOVA Model Guniting Machine is a compact and lightweight air-driven dry-mix shotcrete machine (guniting machine). The SOVA only requires a 375 ft³/min (11 m³/min) air compressor to run the machine and to blow-dry bagged material through hoses to the nozzle, where water is injected into the material immediately before placement. The dry-mix shotcrete method pneumatically projects the material at high velocity toward the wall (or ceiling) to adhere without the need for additional chemicals. The SOVA is used for concrete repair in different applications. In addition, the SOVA can stop and start without the need to clean fresh concrete from the hoses, allowing starting and stopping work breaks.



—REED Concrete Pumps & Shotcrete Equipment, www.reedpumps.com

TruMatch

TruMatch™ from Con-Cure connects cylinders to jobsite concrete by linking cylinder curing conditions to the heat profile of jobsite concrete in real time. The TruMatch Cure Box uses wireless technology to create the perfect curing environment for test cylinders, no matter where the cure box may be. Sensors embedded in the in-place concrete wirelessly transmit the changing temperatures in real time directly to the TruMatch box, which heats or cools circulated water to match. With this technology, test samples cure identically to the in-place concrete, eliminating any difference in strength and maturity between the cylinders and the actual concrete they emulate.

—Con-Cure, LLC, www.concure.com



Batt Screed 6000

Curb Roller Manufacturing, a provider of shaped concrete roller screeds, offers the Batt Screed 6000, a battery-powered roller screed. The versatile roller screed operates without cords, hoses, or fumes, providing mobility, precision, and efficiency to contractors. By eliminating an auxiliary power source, the Batt Screed 6000 can be operated almost anywhere, including indoor operation and tight spaces. The Batt Screed 6000 can accommodate jobs from 3 to 22 ft (1 to 7 m) with expandable tube inserts. With a lightweight design and a folding handle, it is easy to operate and transport. The Batt Screed 6000 includes a heavy-duty kickstand that allows the operator to leave the screed free-standing during placements.

—Curb Roller Manufacturing, LLC, www.curbroller.com



James Bond Tester MK IV

The James Bond Tester™ MK IV measures the bond strength or tensile strength of concrete, asphalt, tile, concrete repair, or other overlay material by the direct tension or pull-off method. Pulling a 2 in. (50 mm) steel disk attached to the material under the unit can determine the tensile strength of a repair, overlay, or adhesive after the material is applied to the surface.

The James Bond Tester™ MK IV involves bonding a circular steel disk to the surface by means of an epoxy resin adhesive. A controlled tensile force is then applied to the disk and failure will occur at the weakest point: either in the host material or in the bond between the overlay and host material. Adequate direct tensile strength between two layers is important if repairs to concrete structures or additional overlays on existing concrete are to be structurally sound.

—NDT James Instruments Inc., www.ndtjames.com

