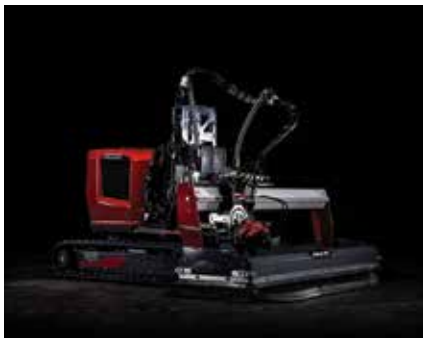
Products & Practice

Aqua Cutter 750V



Aquajet, a designer and manufacturer of hydrodemolition technology, introduced its hydrodemolition robot—the Aqua Cutter 750V. The new model launched Aquajet's patented Infinity oscillation that moves the water jet in an infinity—or figure 8—pattern, removing more concrete in a single pass while reducing shadowing, eliminating the risk of pipe holes, and providing a superior bonding surface. The 750V also features the Evolution 3.0 Control System that includes new functions, including the ability to automatically calculate optimal settings for lance motion for greater precision and efficiency. The 750V cleans and descales reinforcing bars without causing microfracturing. It also maintains horizontal, vertical, and overhead reach, making it suitable for a wide variety of concrete removal tasks, such as renovation and bridge and road repair.

—Aquajet, **https://aquajet.se**

EarthCam 4D

EarthCam, a provider of webcam technology and services, introduced EarthCam 4D, empowering virtual design and construction teams to overlay and sync live imagery with their digital twins. An intuitive timeline allows users to scroll backward and forward in time to view live imagery in relation to their four-dimensional (4-D) models. Built on the Bentley iTwin platform, EarthCam 4D augments Bentley Systems' SYNCHRO 4D models with high-resolution photos from multiple cameras throughout the jobsite, overlaid in precise alignment. Viewers can zoom in and out, and the associated live images remain synced. Transparency/opacity and model color adjustments enable new and powerful ways to compare and contrast models with reality over time.

—EarthCam, **www.earthcam.net**

—Bentley Systems, **www.bentley.com**

Earth Friendly Concrete

Thirdson Construction selected Earth Friendly Concrete® by Wagners for a residential project to eliminate over 29 tonnes (32 tons) of embodied carbon from the building. This saving is the equivalent of running a residential house for 4.5 years.

Earth Friendly Concrete is an ultra-low-carbon concrete that is more sustainable than regular concrete. It reduces embodied carbon by around 70%, saving 250 kg of CO_2 per m^3 (16 lb per ft^3) placed. It is made from a binder consisting of industrial waste products, slag cement, and pulverized fly ash and contains no portland cement, making a positive impact, as the built environment is a major contributor to global carbon emissions.

—Wagners, **www.wagner.com.au**

SafetyCulture iAuditor

SafetyCulture iAuditor helps companies manage safety and quality from a mobile device. By empowering frontline workers to report issues quickly, the app provides visibility and insights to help raise safety and quality standards across an organization. Used as an inspection management system, iAuditor allows teams to collect consistent data, standardize operations, send reports, identify failed areas, and get problems resolved with its easy-to-use checklist software. Organizations can set up smart inspection forms in minutes with an easy drag-and-drop template builder, thus making inspection procedures quicker and easier with an automated construction inspection checklist that can be tracked remotely. The Failed Items and Collaborative Actions features of iAuditor allow frontline workers to alert the full team to hazards or risks on the jobsite.

—SafetyCulture, **https://safetyculture.com**

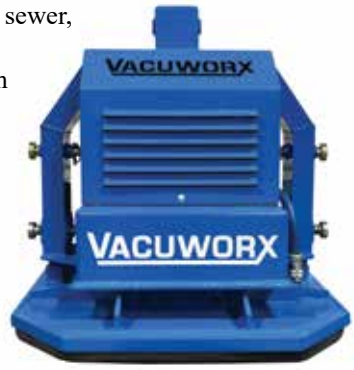
RCA-C Rigid Connector Angle

Simpson Strong-Tie, a supplier of engineered structural connectors and building solutions, has expanded its lineup of rigid connector angles with the addition of the RCA-C, a solution for attaching cold-formed steel stud framing to concrete supports. The RCA-C provides multiple anchor options, including holes for a 1/2 in. (13 mm) diameter anchor screw or bolt, or for two 1/4 in. (6 mm) diameter concrete screws positioned to allow a variety of fastening options.

The Simpson Strong-Tie family of rigid connector angles includes general-purpose clip angles designed for a wide range of cold-formed steel construction applications. With prepunched holes for fastener attachment, these L-shaped clips save time and labor on the job and can be used for miscellaneous header/sill connections to jamb studs, jamb stud reinforcement at track, U-channel bridging, stud blocking, bypass curtain-wall framing, joist connections, and other applications.

—Simpson Strong-Tie, **www.strongtie.com**

Vacuworx Vacuum Lifting Systems



Vacuworx is a manufacturer of heavy-duty lifting equipment for the oil and gas, water and sewer, highway and heavy construction, concrete construction, landscaping, and manufacturing industries. They announced three new vacuum lifting systems: the PS1/PHD Portable Vacuum Lifting System, the SL2 Subcompact Vacuum Lifting System, and the CM3 Compact Modular Vacuum Lifting System.

The PS1/PHD Portable Vacuum Lifting System offers solutions for smaller lifting challenges on the job. Engineered for both interior and exterior applications, these battery-powered lifters can go to work anywhere. The PS1 can lift up to 1700 lb (770 kg). The new PHD features a twin pump design, remote control, and a lift capacity of 2500 lb (1100 kg).

The SL2 Subcompact Vacuum Lifting System is lightweight and versatile. The system has been updated with improved hydraulic systems and modular pads to work with more machines and for more applications. These are available with manual or wireless remote control and are designed to lift concrete, marble, granite, metal, steel, iron, and landscape pavers.

The CM3 Compact Modular Vacuum Lifting System easily adapts to multiple applications and host machines. The CM3 features an all-steel construction to handle materials up to 6600 lb (3000 kg). The hydraulically driven vacuum pump operates using the auxiliary hydraulics from the host machine and can accommodate single or double pad configurations for a variety of materials, weights, and sizes.

—Vacuworx, **www.vacuworx.com**

FieldLink MR

Trimble announced a mixed-reality solution for construction layout with the introduction of the FieldLink MR app. Built on the Trimble Connect® collaboration platform, Trimble FieldLink MR offers a new way to perform construction layout, enabling professionals to quickly navigate to tasks on the jobsite. The app runs on the Trimble® XR10 with HoloLens 2, a hard-hat-integrated mixed-reality device. With Trimble FieldLink MR, field crews can easily visualize construction data without relying on a handheld controller for step-by-step navigation to locate each point. Visual cues presented through the mixed-reality hard hat naturally lead workers directly to each point for them to physically lay out pertinent information on the construction site. Because attracting and retaining skilled workers remains a key challenge for many contractors, reducing the complexity of layout in the field will be essential to enable less experienced staff to deliver quality work.

—Trimble, **www.trimble.com**

Leica AP20 AutoPole

Leica Geosystems, part of Hexagon, introduced the Leica AP20 AutoPole—a solution for automated total stations that boosts productivity through tilt compensation, automatic pole height readings, and unique target identification. The AP20 AutoPole combines an intelligent sensor module with the new AP Reflector Pole, and it operates with Leica Geosystems' existing automated total stations to create a solution for autonomous workflows. The tilt compensation of the AP20 AutoPole increases efficiency when working with total stations. Tilt compensation decreases measurement time and increases flexibility and safety on site by enabling the measuring of points in locations that are inaccessible or put the user at risk. By updating the pole height automatically in the field software, the system ensures that the height on record is always correct, which avoids errors, time-consuming postprocessing, and returning to the field to remeasure. Additionally, the AP20 AutoPole's target identification ensures the user's instrument will always lock to the correct target.

—Leica Geosystems, **https://leica-geosystems.com**

—Hexagon, **https://hexagon.com**

Products&Service Literature&Videos

Embodied Carbon: A Clearer View of Carbon Emissions

International engineering firm Walter P Moore released a stewardship report titled "Embodied Carbon: A Clearer View of Carbon Emissions." The report focuses on the reduction of greenhouse gas emissions. The report first defines embodied carbon, then Walter P Moore experts address why and how members of the architecture, engineering, and construction industry must work in concert to reduce embodied carbon. "Embodied Carbon: A Clearer View of Carbon Emissions" includes milestones related to embodied carbon, a series of technical writings that define why embodied carbons matter, case studies on decarbonization in practice, and a final perspective that defines a path to net zero.

This report is available to download at **www.walterpmoore.com/embodied-carbon-clearer-view-emissions**.

—Walter P Moore, **www.walterpmoore.com**

Book Notes

Guide to Lightweight Cellular Concrete for Geotechnical Applications

by the National Concrete Pavement Technology Center and the Portland Cement Association

Long used as a construction product for flooring systems, lightweight cellular concrete (LCC)—a mixture of portland cement and water slurry, combined with preformed foam to create air voids—has continued to expand its applications into a variety of fields, including the geotechnical industry.

To provide information for construction professionals and design engineers on the use of LCC in specifically geotechnical applications, the National Concrete Pavement Technology Center (CP Tech Center), in collaboration with the Portland Cement Association (PCA), released the *Guide to Lightweight Cellular Concrete for Geotechnical Applications*.

The guide focuses on the materials, properties, design, proper handling, and applications of LCC for geotechnical applications, including common uses, conceptual guidance, and design guidelines. It provides examples of both mixture design preparation and field installation, geotechnical evaluation, and the design, construction, and field testing of LCC. It discusses the segments of the geotechnical marketplace where LCC has been successfully used and reviews the properties, functions, and benefits.

The complimentary guide is available at **www.cement.org/cement-concrete/cement-concrete-applications/geotechnical/lightweight-cellular-concrete**.

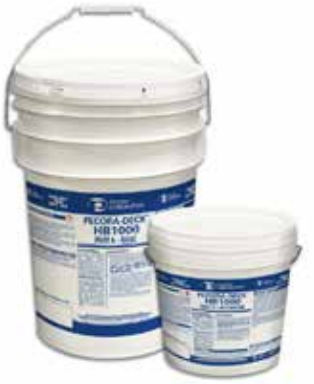
—National Concrete Pavement Technology Center, **https://cptechcenter.org**

—Portland Cement Association, **www.cement.org**

Product
Showcase

Coatings & Sealers

Pecora-Deck HB1000



Pecora Corporation, a manufacturer of architectural weatherproofing solutions, introduced Pecora-Deck HB1000 High Build Traffic Membrane. Pecora-Deck HB1000 is a fast-curing, tough, durable, low- to no-odor alternative to traditional polyurethane and polymethyl methacrylate (PMMA) traffic coatings. HB1000 allows high-thickness (up to 125 mils [3 mm]) single- and multi-component applications without the swelling and foaming issues associated with off-gassing. HB1000 provides a surface that protects traffic- and nontraffic-bearing substrates from physical abuse and water infiltration. It is resistant to ultraviolet (UV) degradation and can be used in areas subjected to heavy vehicular and pedestrian traffic. The product can be tinted, has low volatile organic compound (VOC) emissions, and cures rapidly under adverse conditions when the accelerator is used. This durable coating helps to reduce maintenance costs and extend the life of concrete structures.

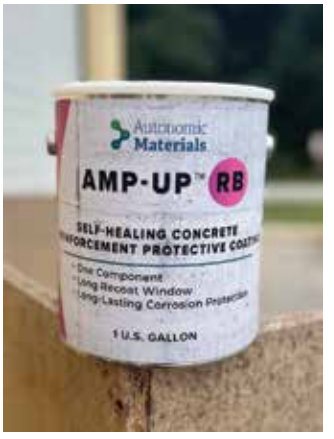
—Pecora Corporation, **www.pecora.com**

NeverFade Coatings

NeverFade® Exterior Coatings from APV are field-applied, water-based, and low-VOC façade restoration coating systems that provide durability in extreme thermal, chemical, and UV environments. The topcoats contain Kynar Aquatec® polyvinylidene difluoride (PVDF) resin, an engineered thermoplastic that maintains high stability when exposed to harsh conditions. In addition, NeverFade contains complex inorganic pigments and UV-blocking additives to inhibit fading and extend life cycles of building façades. The chemistry also resists staining, dirt pickup, and mold growth, and it can prevent corrosion of metal substrates. APV offers a 15-year warranty on color performance. The warranty is fully transferable and covers all product and labor costs when applied by a certified contractor.

—APV Engineered Coatings, **www.apvcoatings.com**

AMP-UP RB



Autonomic Materials, Inc. (AMI), a developer of smart coatings incorporating microencapsulation technology, introduced AMP-UP™ RB, a self-healing, low-VOC protective solution for structural metals embedded in concrete during new construction and concrete repair. AMP-UP RB provides a self-healing barrier that maintains corrosion resistance after damage, minimizing the need for inspections and touch-ups. In addition, AMP-UP RB provides unlimited open time prior to concrete encapsulation. This feature offers contractors unprecedented flexibility in planning their restoration projects and allows for structural steel to be coated in advance of arrival at the site for new construction projects. AMP-UP RB is a single-component product, which eliminates errors and waste associated with mixing multiple components while saving significant time during field application.

—Autonomic Materials, Inc., **www.autonomicmaterials.com**

NXT Level SP

LATICRETE launched NXT Level SP, a polishable, cementitious self-leveling concrete overlay. NXT Level SP is pourable and is primarily used to finish interior concrete slabs. It is available in two finishes, white salt-and-pepper or gray, and provides a bright and clean appearance. Applied over concrete and other sound substrates, NXT Level SP can level uneven floor surfaces in challenging situations. The finishes can be tinted to coordinate with interior finishes or to create designs through the LATICRETE NXT AnyColor™ program.

—LATICRETE, **www.laticrete.com**

Dural 50 LM FS

The Euclid Chemical Company, a manufacturer of products for the concrete and masonry construction industry, launched Dural 50 LM FS. This low-modulus, solvent-free, fast-curing epoxy sealer was designed to penetrate concrete and protect it from the damaging effects of chlorides and water. Over time, water can seep into concrete and cause damage to the surface. Dural 50 LM FS can repair and seal cracks in concrete substrates, while also significantly reducing chloride intrusion. Its ultra-low viscosity ensures superior substrate wetting and easy penetration into static cracks. It can also be used as a fast-setting primer for epoxy polymer overlay systems.

—The Euclid Chemical Company, **www.euclidchemical.com**

MasterSeal HY 35 Hybrid Sealant

Master Builders Solutions released a one-component, fast-curing hybrid sealant that adheres to most surfaces and withstands environmental damage. MasterSeal® HY 35 hybrid sealant is formulated with unique polymers to provide elastomeric properties for a lasting bond. It can be applied to a wide range of substrates, including concrete, stucco, fiber cement, masonry, stone, wood, aluminum, vinyl, and PVDF. It is ideal for vertical or horizontal applications and can be used for sealing a variety of building joints against water and air intrusion. Applications include sealing expansion joints and joints in storefront systems, joints between precast concrete units, and joints around window frames. MasterSeal HY 35 is available in a wide range of colors.

—Master Builders Solutions, **www.mbcc-group.com**

MCI Coatings Guide for Construction Applications

Cortec® MCI® released a coatings guide designed specifically for the building maintenance and construction industries. This two-page handout provides information on the selection of coatings and the basics of how and where to apply them. It helps readers simplify the selection of coatings needed to protect their assets by guiding them to a good coating combo for each specific application. The guide also briefly outlines a critical part of coatings success—how to properly apply a system. Further, it provides a listing of specific features for each primer and topcoat. These characteristics can be used, for example, to select the proper coating for use on an interior surface, on an exterior surface, in a strong chemical processing environment, or in a dry warehouse. The guide brings all the coatings together with a comprehensive chart of recommended system combinations for these different applications, thus simplifying the reader's navigation through the numerous coating characteristics.

—Cortec Corporation, **www.corteccoatings.com**