National Cement

NEWS

2021 Year in Review

Ragland Expansion Nears '22 Completion

CALIFORNIA:

NRMCC continues **near-zero emission** truck fleet expansion

TEXAS:

SmartUP® UHPC utilized in TxDOT bridge projects

GEORGIA:

Walker Concrete supplies material for **industrial megasite**

2021 Content:

National Cement 2021 Year-in-Review

During 2021, the National Cement Company saw major progress in the evolution of our longtime Ragland, Alabama operation and recieved national recognition for our environmental advancements in California, including the introduction of a new low-carbon cement.

www.nationalcement.com

Corporate Office, Southeast
2000 Southbridge Parkway Ste 600
Birmingham, AL 35209
(205) 423-2600

Corporate Office, California
15821 Ventura Blvd Ste 475
Encino, CA 91436-4778
(818) 728-5200

National Cement of Alabama:

Powerful Progress:

During 2021, National Cement's new five-stage preheater-precalciner took shape, rising some 400 feet over the existing Ragland plant. The new equipment allows the use of up to 100% alternative fuels, consistent with VICAT Group's global plan to increase its alternative fuels substitution rate.

While 2020 was dedicated to laying the groundwork for the expansion project, 2021 saw the start of multiple major projects. For months, crews welded oversized sections of the cyclones, a key component of the preheater, together on the job site. They were hoisted into position and have a refractory material installed to insulate the surrounding steel tower from the high-temperatures required to cure the material.

Construction project manager Hervé Lapillonne says the main stack now soars roughly 400 feet. "The main stack is 134 meters in the sky. So, this was a major realization for '21," says Lapillonne. "We've spent months, years, weeks on this project in the design. We really went into lots of details before going into the construction, in term of design, in access, in emission control, in the design of equipment, in sizing the equipment. To finally go from a 3D model that is very theoretical in a computer, and then see the same staircase in the same position that we spent weeks on actually on site, it's really a huge excitement."

When operational in the first quarter of 2022, company leaders say the new production line at Ragland will have the capability to produce an additional 2-million tons of cement each year.

Pictured in September 2021, these overhead views depict construction progress made during the year. *(Top) The new kiln shell, which arrived by barge in sections, was trucked to the site, assembled, and raised in position on a series of kiln piers. (Above) The new clay storage area will include a stacker and reclaimer, allowing for pre-blending of material and the ability to dose that material into the raw mill without any interruption. (Right) A general aerial view depicting the work site including the addition to the existing office building which will house a new testing laboratory and control room.*

National Cement's Lebec, California operation.

National Cement Joins Roadmap to Carbon Neutrality by 2050

In October 2021, National Cement joined an ambitious plan to achieve carbon neutrality across the cement and concrete value chain by signing onto the Portland Cement Association's (PCA) Roadmap to Carbon Neutrality.

In collaboration with PCA's other member companies and experts, the *Roadmap* demonstrates how the U.S. cement and concrete industry can collectively address climate change, decrease greenhouse gases and eliminate barriers that are restricting environmental progress.

Given the significant role of cement in society and anticipated infrastructure development, it is critical that the industry comes together and acts now to create sustainable building solutions in the decades to come.

The *Roadmap* focuses on a comprehensive range of reduction strategies for stakeholders to adopt across all phases of the material's life cycle, such as reducing CO^2 from the manufacturing process, decreasing combustion emissions by changing fuel sources and shifting toward increased use of renewable electricity.

Many of the solutions included in the PCA *Roadmap* are products, technologies and approaches that exist today – and by bringing together a variety of collaborators, PCA intends to ensure the adoption of these solutions on a broad scale. This will accomplish near-term benefits while constantly striving toward the long-term success of reaching carbon neutrality.

"Our longtime Ragland, Alabama cement plant is nearing completion of a new 5,000-ton-per-day kiln line that will operate on 100% alternative fuels, mainly biomass, allowing us to provide customers with cement

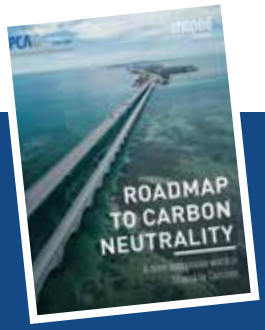
"National Cement Company is committed to developing sustainable solutions for the needs of construction. We are proud to be part of the PCA Roadmap for the carbon neutrality through the value chain," says Eric Holard, NCC's CEO.

that has an optimized carbon footprint," says Spencer Weitman, President of National Cement of Alabama.

Industry experts, researchers, policymakers and companies along the value chain are imperative to realize the multitude of solutions that must be developed across policies and regulations, technology, innovation and demand generation – creating both near-and long-term CO^2 reduction opportunities and constantly striving toward carbon neutrality.

"The PCA roadmap includes reducing direct emissions from concrete manufacturing and transportation," says Steven Wise, President of National Cement of California.

"Our Southern California ready mix operation has replaced diesel trucks with 130 new Compressed Natural Gas (CNG) heavy duty trucks to deliver cement and aggregates to our concrete plants as well as concrete to our customers jobsites. Our fuel source is a Renewable Natural Gas (RNG) which has a negative carbon footprint according to the state of California and reduces CO^2 by over 40,000 tons in one year," he says.



A More Sustainable World is Shaped by Concrete

Cement and concrete companies worldwide have committed to achieve carbon neutrality across the value chain by 2050. Addressing climate change is a global task, but each country presents specific opportunities and unique challenges, and the PCA Roadmap presents a plan tailored to the U.S. cement and concrete industry. PCA is aligned with the Global Cement and Concrete Association's Roadmap.

Three of the National Ready Mixed Concrete Company's 117 near-zero natural gas trucks at Vernon, CA.

One of NRMCC's new Peterbilt mixer trucks, powered by compressed natural gas, on the streets of downtown Los Angeles.

NRMCC added 24 more near-zero emission mixer trucks during 2021

The deployment of another two dozen near-zero emission compressed natural gas (CNG) concrete mixers expanded National Ready Mixed's Southern California CNG fleet to 117 trucks.

Much of NRMCC's CNG fleet is fueled with 100% carbon-negative renewable natural gas (RNG) produced in California, enabling the company to go beyond carbon neutrality and make a beneficial impact on climate protection and regional air quality.

The company began converting its heavy-duty fleet of mixers and haulers to near-zero natural gas trucks in June 2020.

NRMCC's fleet of concrete mixers, cement and material haulers travel throughout Southern and Central California, relying on Cummins Westport's natural gas engines for the power and range needed to transport heavy payloads.

"In the past year alone, NRMCC has driven nearly 5 million miles with our CNG fleet fueled by RNG," says Steve Lode, President of NRMCC. "There is no other low- or zero-emission technology available today that could enable a heavy-duty fleet like ours—running routes from Southern to Central California pulling heavy loads of cement—to offset the level of greenhouse gas (GHG) emissions reductions that we've achieved." Annually, NRMCC's fleet will consume more than 1.2 million DGE of RNG, fueled in part at its private natural gas station built at its Vernon plant.

The RNG, sourced from dairy digesters, has a carbon intensity score of negative 200, enabling the company to reduce its CO^2 emissions by more than 42,000 metric tons each year—the GHG equivalent of removing 9,100 passenger vehicles from the road each year or creating electricity for 7,600 homes.

"NRMCC presents another example of how RNG fueled near zero emission trucks can deliver crucial GHG, CO2, and criteria pollutant emission reductions today," said Tom Swenson, vice-chair of the California Natural Gas Vehicle Partnership and business development manager for Cummins Inc.

"Real and immediate environmental impacts can be made when companies such as NRMCC commit to investing in clean fuel and technology options."

National Recognition:

***Concrete Products* magazine, the oldest business-to-business periodical in the North American concrete industry, published an extensive cover story on NRMCC's migration from diesel to compressed natural gas (CNG).** The front cover of the November 2021 edition featured a project photograph by Gus Ruis, plant manager of the Vernon, California ready mix operation. "Few, if any, peer operators have matched the transparency National Ready Mixed Concrete Co. exhibits with a breakdown of the impact that renewable natural gas has on enterprise carbon dioxide emissions reduction efforts," wrote editor Don Marsh. *Concrete Products* has been published continuously since 1947 and is today produced by Semco Productions.

In recognition for its adoption of more sustainable transportation methods, NRMCC received the 2021 NGV Achievement Award in October 2021. This prominent award was made by NGVAmerica, a national organization dedicated to developing natural gas or biomethane as an economical, clean, safe, and abundant transportation fuel. "In 2021 alone, NRMCC replaced over 1 million gallons of diesel fuel with renewable natural gas (RNG), reducing close to 20,000 metric tons of CO^2," says NGVAmerica Chairman Jim Arthurs. "We are proud to recognize organizations like NRMCC for making their communities healthier with fewer emissions through the increased use of readily available, carbon-negative renewable natural gas."

National's Steve Wise (center) and Steve Lode (R).

During 2021, NRMCC's near-zero emission truck fleet reduced greenhouse gases the equivalent of:

Planting
328,141
Trees

Eliminating
19,845
Metric tons of CO^2

Removing
4,316
Cars from the road

Product News

Portland-Limestone cement is engineered with higher limestone content at our Lebec, California operation.

plc
portland-limestone cement

Type IL Introduced in California Market

National Cement of California introduced Type 1L, an advanced type of cement, to the Southen Califonia market and began making it available via our ready mix subsidiaries in the Bakersfield and Los Angeles service areas.

Portland-limestone cement, or PLC, is engineered with a higher limestone content than portland cement. This product can bring a 10% reduction in the carbon footprint of concrete. Portland-limestone cement can contain from 5% to 15% limestone along with the clinker.

"As you know, cement is the essential ingredient in our ready mix concrete, and PLC combines the strength, durability and resiliency with the added benefits of environmental performance," says Chris Heilmann, Vice President of Sales for National Cement Southern California. John Halverson, Director of Technical Services at National Ready Mixed Concrete Co., is working directly with designers, architects, engineers to get the low-carbon cement specified in the marketplace.

Also in 2021, the Portland Cement Association launched a new national campaign to increase awareness of PLC among specifiers, architects, engineers, and producers.

You can learn more at *GreenerCement.com* where you will find fact sheets, case studies, a CO^2 calculator and other informative materials.

National Cement of California Produces Environmental Product Declaration (EPD)

During 2021, National Cement of California completed the lengthy process to develop an Environmental Product Declaration (EPD) for cement products manufactured at the Lebec, California production plant.

An EPD is a third-party verified document that is officially registered to show the environmental impact of a product or service.

The EPD prepared for National Cement was certified by ASTM International, covers three cement products: traditional Type II/V and the new Type1L and Type IL Block products. Type IL cement is a general use cement engineered to reduce the carbon footprint by integrating a higher ground limestone content than permitted in Type II/V cement.

The life-cycle analysis (LCA) was prepared by Laurel McEwen, VP of EPD Services for California-based Climate Earth.

A Life Cycle Assessment is a tool that identifies the environmental impact of a product or organization throughout its life cycle. LCA quantifies the impacts of greenhouse gas emissions, energy use, water consumption, acidification, and ozone layer depletion. An LCA is used to breakdown different input and outputs at each stage of a product's life cycle – from raw material extraction, producing and using a product, transport, and finally disposal or re-use (cradle to grave).

Product News

Rick Lucchi, project superintendent for UHPC Solutions, loads a georgia buggy with Smart-UP on a job site in rural Texas.

SMART UP®

SMART-UP®, Vicat's ultra-high-performance fiber-reinforced concrete for structural, architectural and design applications, now has a dedicated U.S. marketing team reaching out to departments of transportation nationally.

UHPC has been a major component in many of the country's Accelerated Bridge Construction (ABC) projects, used primarily in prefabricated bridge element construction; sometimes called closure pours.

The Texas Department of Transportation (TxDOT) recently utilized UHPC for prefabricated bridge element connections on a series of five bridges in North Texas. One of those bridges is in rural Hemphill County, located on the eastern side of the Texas Panhandle, close to the border with Oklahoma. People living near the small town of Canadian, TX rely on U.S. Highway 83 as a major travel route. That's why it was important to limit the road's closure during a series of recent bridge replacement projects.

"The detour lengths of these bridges were significantly longer than what could be considered normal," says Sonja Gross, Public Information Officer for TxDOT's Amarillo District. "To limit the impact to the consumer, we looked into alternative construction methods." That alternative involved accelerated bridge construction (ABC): the utilization of precast elements, including columns, piers, cap beams and Northeast Extreme Tee (NEXT) beams. The bridge joints and end slabs were the only cast-in-place components needed before traffic was returned.

While a typical bridge replacement can take up to six months, this project was finished in just 12 days. Texas Concrete Partners, LP, a well known supplier of prestressed concrete products, fabricated the girders, the NEXT beams and the precast bent caps used in the project. Dave Tomley, chief engineer of Texas Concrete

Partners, says contractor Webber, LLC self-performed the abutments and the wing walls, and then added cast-in-place barriers.

Tomley expects the use of ABC to only increase over time. “I think across the board, I’d say the majority of the state DOTs throughout the United States have already delivered projects using Accelerated Bridge Construction because of both the time savings and the cost savings as well. There’s just tremendous amount of benefits with ABC.”

Compared to traditional concrete, connections between precast elements made with UHPC are simpler and smaller. That’s because the amount of rebar is reduced by 50%. In fact, the rebar can be straight; no bending or headed bars are needed. After prep work, placement of the UHPC averaged five to six hours on each bridge.

Fernando Pellico, Project Manager at Webber, says UHPC has impressive properties and is a great option for projects using precast elements on an accelerated construction schedule. “UHPC is very different from traditional concrete,” says Pellico.“ I think it does require a different approach in terms of safety, quality control, and placement of the material. So in my opinion, UHPC Solutions adds value by partnering with a general contractor like Webber and DOTs, providing guidance to all the steps of the construction process.” In the end, the bridge and road were closed for only 12 days. “Just a tremendous amount of time savings with this technology,” says Dave Tomley.

Two mixers, each producing 1.25 yd^3 batches, were used to keep a steady flow of material available. The SmartUP UHPC was able to maintain a flowable, easy-to-place consistency even in temperatures approaching the 90-degree mark.

Smart-UP Team:

Robert Taylor, P.E.
Business Development
U.S. Sales

Robert has over 30 years of experience with Roadway Construction, Design and Maintenance. His varied background and experience with concrete and marketing position Smart-UP UHPC for growth in the United States market.

Hannah Tzabari,
Technical Service Engineer

Hannah handles on-site quality control and fields inquiries about the successful use of the product. Hannah has a Structural Engineering master’s degree focused on UHPC, and uses her experience to promote Smart-UP in the US market.

Kirkpatrick delivered an average of 175 yards an hour to the slab rehabiliatation project at Bessemer, Alabama's BLOX plant.

Kirkpatrick • ConcreteSouth

Building BLOX:

Kirkpatrick Concrete recently supplied a custom mix design and the delivery know-how to meet the needs of a unique industrial project: the rehabilitation of concrete factory floors dating back to 1929. It's all part of the expansion of BLOX, a company that designs and manufactures prefabricated building modules for the healthcare industry.

Their manufacturing site in Bessemer, Alabama opened as a Pullman Rail Car plant in the late 1920's. Over the next 50 years, the site grew, adding more and more production lines to turn out thousands of rail cars. Those assembly lines idled when the massive operation closed in 1981.

Now, 40 years later, the original, historic assembly lines are being modernized to build high-tech medical modules, literally the building blocks of hospitals and healthcare centers of tomorrow.

The existing assembly buildings are perfect for the task, but the concrete floors, worn down by decades of industrial activity, required extensive rehabilitation to meet the modern standards for levelness and flatness required by today's assembly lines.

The BLOX team turned to Kirkpatrick Concrete to supply new concrete for the old facilities. "We worked with the BLOX engineers for about 90 days to help perfect a mix design," says Kirkpatrick General Manager, Keith Rickles. "We did a series of trial batches and worked very closely with the engineers and owners."

Rickles says to help the BLOX team zero in on a final mix design, the company

conducted a test pour at their downtown Birmingham lab so they could see the concrete in action. “We ended up with a 4,000 PSI mix design that used a mid-range water reducer, a superplasticizer, microfibers, and a shrinkage reducing admixture (SRA),” he says. “The final design performed very well in the field.”

Once the mix was settled upon, the next step involved formulating a complex, three-night plan to actually get the material on the ground. “We had a lot of pre-pour meetings with the BLOX owners, superintendent, and foremen,” notes Rickles. “One of the things they wanted was to make sure we could batch 220 yards an hour and get 180 yards an hour on the ground each night.”

To meet that aggressive delivery rate, Kirkpatrick pulled their entire team together, tapping two nearby plants to service the job. “Over the course of those three nights we really staffed up on site,” says Rickles. “We had a ticket runner at each plant, we had a QC person per plant, we had somebody putting fiber in per plant. We also had a mechanic and two plant maintenance people with us at all times. We had backup cement storage, a backup air compressor, a backup generator, rented light units. We really geared up for the logistics of this complex project.”

Rickles says over the course of three nights, the delivery rate for the project averaged 175 yards an hour. The brisk pace kept forming and finishing crews busy. The delivered material was poured directly atop existing battered slabs. Between six and a half to 10 and a half inches of concrete was needed to level out the new surface.

Rickles says this rehab project represents a new customer-centric approach for Kirkpatrick. “This project is a perfect showcase of what great customer service can do,” says Rickles. “We were proud to have a very smooth pour of 1000 to 1200 yards slabs each night that went exceedingly well. Today, Kirkpatrick is really focusing on the customer service side of things and truly partnering with owners and the general contractors in the area. And so, that’s a different type of relationship.”

(Above) The Pullman Railcar Manufacturing plant as it appeared in 1981. The Bessemer, Alabama plant operated from 1920 to 1981 and encompassed 416 acres. *(Library of Congress)*

Walker Maintains Fast Pace for Industrial Site

Walker Concrete began the year with material deliveries to an immense industrial site in Newnan, GA known as The Cubes at Bridgeport.

Work began on Building A of Bridgeport, a 500-acre industrial mega site in January 2021. Walker Sales Representative Drew Stripling, who is from the area, said such enormous projects are nothing new for the company. “Walker has a lot of expertise in this type of work, and there are countless warehouse jobs in the area we’ve been a part of.”

Martin Concrete, headquartered in Kennesaw, GA, is known as one of the top commercial concrete contractors in the Southeast.

Stripling said this longtime customer has come to count on Walker’s experience and capability to keep up with the tight delivery schedules required for warehouse projects. “Martin Concrete likes that we are able to provide consistent service,” Stripling explained. “They like the fact that we can maintain our service level at even 100 yards per hour or better. Keeping up that fast pace increases their production numbers.” Because of the massive size of the warehouse, some phases of the project required overnight delivery rates of up to 100-yards an hour.

Walker’s entire production team was called upon to meet the challenging delivery schedule. “I don’t think we can emphasize enough the demand on our personnel and how they all stepped up to get it done,” said Walker’s Larry Goodson.

“Our workforce includes drivers with one to five years’ experience up to a 20-plus year driver, and they all show up at midnight. It’s tiring, it’s a grind, it’s grueling, but at the end of the day, we come through and have a successful pour for the customer.”

Walker was tasked with pouring slabs, footers, tilt-up walls and pavement for this 611,000 square foot warehouse in Coweta County, Georgia.

Driver Spotlight:

Dixon Lindsey, Jr., also known as “Cowboy”, has been driving for Walker for 23 years. Long overnight hours in all kinds of weather don’t seem to faze Lindsey. “This was a fast-paced project, which I don’t have a problem with,” Lindsey said. “I love the night work myself. It’s perfect for me.”

Lindsey was proud to be part of the Bridgeport project for another reason: “It’s bringing a lot of jobs to Newnan. I’m glad for not only myself, but for the people in the area.”

Lindsey’s positive attitude is always reflected in his work. Walker Sales Representative Drew Stripling noted: “The younger guys look up to Cowboy and consider him somewhat of a mentor because they’ve seen that since he’s been in the industry for so long, he’s made a good career out of it. I think a lot of them strive to be like him.”

QuickTakes

A quick look at major projects and happenings around our company's footprint

Wald Park Renovations

Kirkpatrick supplied material for the massive renovation of Wald Park in Vestavia Hills, Alabama. The park reopened in 2021 with new green space, multiple ball fields including Miracle League Field, an aquatic complex with competition and leisure pools, a dog park, tennis complex, a walking track, walking trails, and multiple playgrounds.

ARFF for BHM Airport

In March 2021, Kirkpatrick supplied the final round of material for a new Aircraft Rescue and Fire Fighting Station (ARFF) at the Birmingham-Shuttlesworth International Airport (BHM). The facility features 4 vehicle bays and over 17,000 square feet of space to house personnel and firefighting equipment required by the FAA.

New Driver Recruitment Efforts Pay Off in South

At the beginning of 2021, Kirkpatrick's Central Division was losing an average of two drivers each week. General Manager Keith Rickles surveyed drivers and found one reason for the attrition was Saturday deliveries. "We were the first company in Central Alabama area to say, "We're not going to work on Saturdays anymore." We announced that in April. Put it into effect in May." The company also added a dedicated Fleet Manager, Matt Tracy. "Having a management person that's dedicated to drivers, be their advocate and help manage what's going on in their lives has been a huge help as well."

Changing LA's Skyline

National Ready Mix was involved in the construction of 755 Figueroa, a 65-story multi-family development built on a massive foundation which required one of the biggest pours in company history. National's Vernon, CA mega-batch plant was tasked with producing 5,500 yards in one day with Artesia and Glendale plants supporting production demand. At its peak, National delivered 800 yards per hour, reaching a target of 9500 cubic yards in a one day.

Updated Gardendale

To improve the operational performance of Kirkpatrick's Gardendale, Alabama operation the plant received bin and belt repairs, a new dust collection system, and new gates. The goal of the update is to improve production efficiencies and allow the plant to better serve large commericial projects.

Walker Products

Walker Construction Products, our subsidiary located in metro-Atlanta, supplies landscaping materials and garden products to homeowners and building professionals. In January 2021, a refreshed website came online to better serve customers in Jonesboro and Tyrone, Georgia.

Kirkpatrick HQ Renovations

Kirkpatrick Concrete's longtime headquarters building, located in the same spot near downtown Birmingham since 1920, underwent a modest remodel in 2021 including new flooring and updated paint. The updated facility now features a newly renovated central dispatch center and customer demonstration area in the lobby. Additionally, the building's walls highlight the company's long history of service with a series of oversized prints of historic photographs.

Strengthening Communities:

National Cement works hard to be a positive part of the communities we call home. We are proud to support local programs that make a real difference in communities and encourage employees to be active in efforts that improve the quality of life where they live and work.

Turkey Creek Nature Preserve

Kirkpatrick is a longtime supporter of environmental education programs in Central Alabama. In 2021, we supplied material to build an outdoor teaching pavilion at the 466-acre Turkey Creek Nature Preserve. “We participated last year by donating some concrete, and in 2021 we helped finish it up,” says **Spencer Weitman**, President of National Cement of Alabama. “It’s part of what we do. It’s our culture. The environmental programs they conduct are about teaching children and that’s in our company’s DNA.”

2021 Benefit for Magic Moments

National Cement and Kirkpatrick Concrete provided material to help build the foundation, driveway and retaining walls for the *Birmingham Home & Garden* 2021 Inspiration Home, a benefit that raised over $22,000 for Magic Moments. The charity was founded in 1984 with the sole purpose of providing happiness to children throughout the state of Alabama who are diagnosed with chronic life-threatening illnesses.

Live HealthSmart Alabama Program

The University of Alabama at Birmingham (UAB) has taken on what they call a “Grand Challenge”: to move Alabama out of the bottom ten in national health rankings. As part of their effort, *Live HealthSmart Alabama* cut the ribbon on several community improvements during 2021, including new sidewalks in a number of underserved areas. Kirkpatrick Concrete donated material to build new walking areas in Birmingham’s Stockham Park and in the Titusville community.