

# Products & Practice

## Genie GTH-1256

The Genie® GTH™-1256 telescopic handler builds on the design of the Genie 6K, 8K, and 10K telehandlers. The 12,000 lb (5400 kg) capacity telehandler is designed to improve durability, lower total cost of ownership, and provide maximum productivity on the jobsite. Focused on simplifying fleet ownership and maintenance, the new GTH-1256 shares many features and parts across the other GTH product line. The GTH-1256 delivers 6000 lb (2700 kg) at a maximum height of 56 ft (17 m) and 3500 lb (1590 kg) at maximum outreach of 42 ft (13 m). Limited slip differentials on both axles and full-time four-wheel drive provide the torque and traction needed for any jobsite, while single-reduction, planetary, specialty, and transaxle lines deliver the reliability, power, and performance for rough terrain. A new cab design features enhanced visibility of all four tires, a 7 in. (178 mm) display, reverse backup camera, rear proximity alarm, and full air-conditioning system. The Genie Quick Attach system makes it easy and fast to swap attachments, and the GTH-1256 shares attachments with Genie's GTH-1056 10K telehandler.

—Genie, [www.genielift.com](http://www.genielift.com)



## PS=Ø Mechanical Reinforcement Splice System

The PS=Ø® Mechanical Reinforcement Splice System by Reigstad can be used to eliminate pour strips, and also can be used in temporary stressing strips and slabs at walls to allow more time for restraint to shorten relief without interrupting construction schedules with delay strips or costly slab-wall slip details. A gapless pour strip can be achieved while still allowing for shrinkage and maintaining reinforcing bar integrity with the use of PS=Ø. Self-supporting slabs are created, allowing contractors to use less expensive shoring, thus reducing costs, accelerating schedules, and improving safety. PS=Ø makes construction of restraint relief details easier, faster, and less costly, improving quality and productivity for the entire project. Approved by the International Code Council (ICC), PS=Ø is also an ACI 318 Code-compliant reinforcing bar splice that provides for code-required structural integrity, just like a traditional pour strip. The following are all easily accomplished PS=Ø restraint relief details: slab-to-slab, slab-to-slab with temporary stressing strip, slab-to-wall, slab-to-wall with temporary stressing strip, beam-to-beam, and beam-to-beam with temporary stressing strip.

—Reigstad, [www.reigstad.com](http://www.reigstad.com)

## Brass Knuckle Read

Brass Knuckle® announced Brass Knuckle Read (BKREAD-6010). A worker who wears corrective lenses is not exempt from wearing proper eye protection. The revised ANSI/ISEA Z87.1-2015 standard recognizes the need for protective readers that offer magnification for the wearer. With BKREAD-6010, Brass Knuckle is working to meet this need. BKREAD-6010 is a great-fitting, cost-effective, super-light bifocal eye protection available in five diopter strengths: 1.0, 1.5, 2.0, 2.5, and 3.0. A durable polycarbonate frame provides extra side protection and all-day comfort. The clear lenses are ANSI-rated hard-coated polycarbonate with BK-Anti-FOG. The BK-Anti-FOG lasts a full 2 minutes. It is permanently bonded to the lens, will not wear off or wash off, and retains its anti-scratch, anti-static, and ultraviolet protection properties.

—Brass Knuckle, [www.brassknuckleprotection.com](http://www.brassknuckleprotection.com)



# Products & Practice

## Guardian A5 Concrete Expansion Anchor, Swivel Anchor, and Saddle Anchor

Guardian introduced three new anchors to its anchor lineup. Designed to reduce complexity and enhance ease of use, the three new models include the A5 Concrete Expansion Anchor, the Swivel Anchor, and the Saddle Anchor. The A5 Concrete Expansion Anchor is a “lollipop” style concrete anchor that features an ergonomic thumb rest, clear protective cable wrap for easy inspection, and is rated to 5000 lb (22 kN). The anchor is easily installed and removed for quick relocation. The Swivel Anchor is a robust 10,000 lb (44 kN), 360-degree swiveling anchor designed for concrete or metal substrates. The main Swivel Anchor component is reusable and is compatible with any attachment method, reducing the number of required parts to cover a wider range of applications. Designed for installation directly onto wood structural beams, the Saddle Anchor is available in 12, 18, and 24 in. (305, 457, and 610 mm) heights. The product is fully American National Standards Institute (ANSI), Occupational Safety and Health Administration (OSHA), and Cal-OSHA compliant and meets the city of Los Angeles, CA, USA, approved fabricator requirements.



—Guardian, [www.guardianfall.com](http://www.guardianfall.com)

## TakeoffHQ

Foundation Software TakeoffHQ is a web-based, all-in-one quantity takeoff and estimating software solution. With it, estimators can measure and calculate material and labor estimates quickly and efficiently. Once the estimate is finished, data can be exported directly into programs like FOUNDATION® construction accounting software. TakeoffHQ was designed to provide contractors an all-in-one takeoff and estimating solution that integrates with the Foundation’s family of connected construction apps in HQSuite. As the newest addition to HQSuite, TakeoffHQ will join ProjectHQ, SafetyHQ, ExecutiveHQ, and CrewHQ. The Foundation’s family of construction software and services allow contractors to take control of every stage of every project.

—Foundation Software, [www.foundationsoft.com](http://www.foundationsoft.com)

## Web Notes

### The Ray Ainsworth Story (Electrocution)

The American Concrete Pavement Association (ACPA)

updated and re-released an important safety awareness video for the concrete pumping industry titled “The Ray Ainsworth Story (Electrocution).” Operating the boom of a concrete pump requires alertness, especially when working in and around high-voltage areas. Electrocution is one of the Occupational Safety and Health Administration’s “Fatal Four” leading causes of workplace deaths in the construction industry. This video is a case study about the high-voltage accident that nearly took Ainsworth’s life. The ACPA’s re-release of the video preserves Ainsworth’s story while also providing updated guidance on power line safety. Measures that have changed since the video’s inception more than a decade ago include the ACPA’s extension of the 17 ft (5 m) rule to a minimum clearance of 20 ft (6 m) from power lines carrying up to 350,000 volts and 50 ft (15 m) for 350,000 or more volts, respectively. Other updates include the requirement of a spotter when power lines are in the boom movement area of a placement and responsibilities outlined in ASME B30.27, Material Placement Systems.

—ACPA, [www.concretepumpers.com](http://www.concretepumpers.com)



## Book Notes

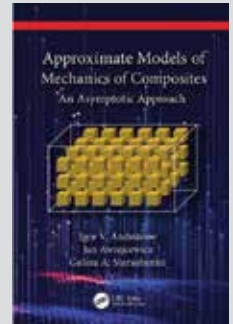
### *Approximate Models of Mechanics of Composites: An Asymptotic Approach*

by Igor V. Andrianov, Jan Awrejcewicz, and Galina A. Starushenko

*Approximate Models of Mechanics of Composites: An Asymptotic Approach* is a guide to constructing asymptotic models and mathematical methods to identify the mechanical behavior of composites. It provides methodology for predicting and evaluating composite behavior in various structures, leading to accurate mathematical and physical assessments. This book estimates the error of approximations by comparing asymptotic solutions with the results of numerical and analytical solutions to gain a holistic view of the data. The authors have developed asymptotic models based on mathematical and physical rigorous approaches, which include three-phase models of fibrous composites, a modernized three-phase composite model with cylindrical inclusions, and models of two-dimensional composites of hexagonal structure. Also covered are two-phase models of composites related to the Maxwell formula and a percolation transition model for elastic problems based on the self-consistency method and Padé approximations. By obtaining analytical expressions to effectively characterize composite materials, their physical and geometric parameters can be accurately assessed. This book suits engineers and students working in material science, mechanical engineering, physics, and mathematics, as well as composite materials in industries such as construction, transport, aerospace, and chemical engineering.

**112 USD (hardback); 367 pp.; ISBN 9781032488301**

—CRC Press, [www.routledge.com](http://www.routledge.com)



## NEW and UPDATED ACI Specifications



### Specifications for Concrete Construction

ACI's 301-20 is a specification that architects and engineers can apply to any construction project involving structural concrete.

### Field Reference Manual

ACI's *Field Reference Manual* is a compilation of ACI 301-20, "Specifications for Concrete Construction," and additional ACI documents.



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## Innovative Products

### Concrete Now!

Master Builders Solutions launched its web and mobile app, Concrete Now! The app provides concrete professionals with calculators and estimators for fiber dosage, carbon footprint, surface evaporation, concrete temperature, and concrete volume. Concrete Now! offers insights to help concrete professionals plan a response to current and future conditions, as well as incorporate fiber reinforcement or embodied carbon goals. The app includes the MasterFiber® Dosage Calculator, which helps with the transition of replacing conventional steel reinforcing bars or welded wire reinforcement with fiber reinforcement by calculating the fiber dosage for use in slabs-on-ground and composite metal deck slabs. Another app feature is the Embodied Carbon Estimator to analyze several key factors and provide a comprehensive view of carbon emissions associated with concrete production. The Surface Evaporation Estimator determines plastic-shrinkage cracking potential by estimating the concrete's performance under anticipated weather conditions. The Concrete Temperature Calculator estimates the temperature of freshly mixed concrete, considering the specific heat and mass of its ingredients, to effectively address hot and cold weather challenges. Lastly, the Concrete Volume Calculator aids in material estimation for a specific project.

—Master Builders Solutions, [www.master-builders-solutions.com](http://www.master-builders-solutions.com)



### CorroDec 2G Sensors

InfrastructureTek's CorroDec®2G sensors provide continuous remote health monitoring for building or infrastructure assets. Corrosion, humidity, and temperature monitoring sensors are available. CorroDec 2G sensors are passive and embedded within the concrete. They deliver early warnings against corrosion and moisture threats to any concrete structure before corrosion manifests as cracks, spalls, and concrete degradation. CorroDec 2G corrosion sensors operate based on a substitute corrosion principle, where the rusting of a sensor wire indicates corrosion. Housed within its casing, the sensor's wires mimic the corrosion behavior of typical reinforcing steel. Corrosion levels are determined by measuring wire resistance, allowing users to assess the presence of a corrosive environment above or at the reinforcement depth within the structural member. The dual wire levels offer insights into the progression of corrosion within the concrete. Once placed inside concrete next to the reinforcing steel, CorroDec 2G sensors can assess its condition and transmit real-time readings for a lifetime of up to 80 years, enhancing longevity and safety for concrete-based assets. They operate without power, using external radio-frequency identification (RFID) for energy. Data is transmitted through the cloud using narrowband (NB-IoT).

—InfrastructureTek, [www.infrastructuretek.com](http://www.infrastructuretek.com)



# Product Showcase

## Aren Artificial Intelligence

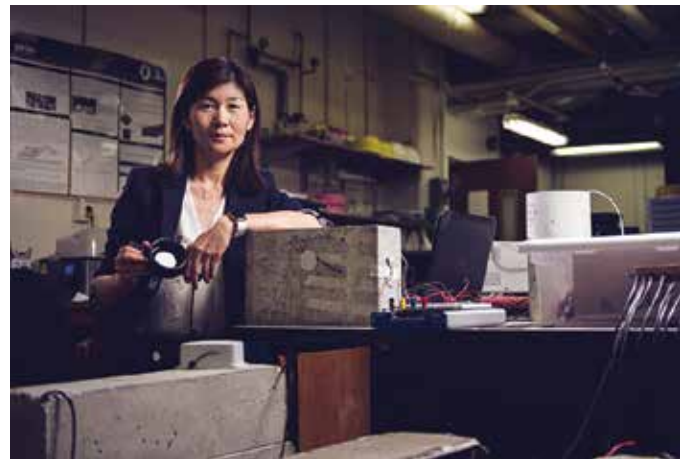
Aren is an end-to-end, artificial intelligence (AI)-powered platform designed to assess buildings, bridges, and built environments to allow data-driven decision-making and risk management. The software-as-a-service (SaaS) platform uses patented technology to combine AI with civil engineering to provide high-resolution visualizations of assets and their structural health. The platform enables the creation of fast, objective, and thorough engineering assessments. Aren's business-to-business (B2B) SaaS platform automatically aggregates raw data from different sources, such as images, videos, and laser scanners, and provides a three-dimensional high-resolution visualization of the asset and its health through time, as well as predictive maintenance plans, capital allocation plans, and service life estimates. Aren's technology offers a cost-effective, automated approach to de-risk the inspection, assessment, and management of civil infrastructures, such as bridges, building façades, and dams.

—Aren, Inc., [www.aren.ai](http://www.aren.ai)

## Wavelogix Rebel Concrete Strength Sensors

Wavelogix Rebel Concrete Strength Sensors have been listed as one of *TIME*'s Best Inventions of 2023. This construction industry innovation was developed by Luna Lu, the Reilly Professor of Civil Engineering at Purdue University, West Lafayette, IN, USA, and the Founder and CEO of Wavelogix Inc. Lu launched the startup Wavelogix to bring these sensors to market. These concrete sensors directly measure, in real time, in-place concrete strength. The sensors enable engineers to make data-driven decisions to improve efficiency, safety, and overall success of a construction project. The Wavelogix sensors do not require destructive concrete testing or the development of a maturity curve, and they are embedded directly into a concrete placement. This product sends precise, consistent data about the concrete's strength and need for repair.

—Wavelogix, [www.wavelogix.tech](http://www.wavelogix.tech)



(photo courtesy of Purdue University)

## Exodigo Subterranean Mapping

Exodigo, a technology innovator combining the power of proprietary advances in three-dimensional (3-D) imaging, sensors, and artificial intelligence (AI), announced its nonintrusive subterranean mapping platform for construction, mining, and utility companies. Carried by drones or small carts, the Exodigo sensor system provides 3-D subsurface imaging that eliminates the need for exploratory excavation and powers smart drilling and sustainable operations by de-risking the discovery process across industries. Exodigo can rapidly create a digital geolocated, 3-D map of buried assets—from human-made pipes and cables to soil layers, rocks, minerals, and even groundwater across any terrain. Exodigo gives construction, mining, and utility companies a better way to know exactly what is underground. Its subsurface mapping solution combines advanced sensors, 3-D imaging, and AI technologies to give a clear picture of the underground, so that companies can make more informed decisions before they start design, construction, or resource excavation.

—Exodigo, [www.exodigo.com](http://www.exodigo.com)