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## Precast/ Prestressed & Post-Tensioned

**29** Design of Variable Depth Single-Span Post-Tensioned Concrete Bridges



American Concrete Institute

## COMMAND Center AutoCollect and COMMAND Center Cloud

COMMAND Center AutoCollect is a fully autonomous concrete data collection option and is part of COMMAND Center's concrete temperature and maturity monitoring system. With AutoCollect, users can measure and log concrete temperature history, calculate maturity, and evaluate in-place strength while away from the jobsite. In addition, COMMAND Center offers a cloud sharing platform for users: the COMMAND Center Cloud. The secure COMMAND Center Cloud works with or without the AutoCollect option, allowing teams to sync project files automatically across multiple devices and protect files with user privileges. AutoCollect uses a cellular signal to automatically send sensor data to the COMMAND Center Cloud, where teams can access it in real time from anywhere, on or off the jobsite. Users can receive real-time alerts via text message or e-mail when their concrete approaches temperature limits or achieves estimated target strength. AutoCollect offers alternative download options and data redundancies to reduce potential data loss, so teams can be sure their concrete data is safe.

—COMMAND Center, [www.commandcenterconcrete.com](http://www.commandcenterconcrete.com)



## Giatic SmartRock Redesign

SmartRock™, a wireless concrete maturity sensor, was completely redesigned in 2020. SmartRock monitors concrete curing and hardening using an ASTM International-approved testing method. The redesigned sensor's wireless signal range is now five times stronger; it can collect data from 40 ft (12 m) away through concrete with the option to access data remotely via a local hub. With a complete revamp to the sensor's design and updated activation and QR code tagging method, this wireless, fully embedded device is hassle-free, robust, and secure. Key features updated for the SmartRock sensor include: a reengineered sensor

that is simpler to implement and use on-site; a new mobile application that was completely rebuilt; an enhanced cloud-based dashboard; a more powerful artificial intelligence (AI) assistant, Roxi; and a new REST API interface, which introduces the ability for more applications to link with the Giatic concrete testing platform. The redesign of the SmartRock sensor enables measuring temperature values at two locations simultaneously, one at the temperature probe (tip of the white cable) and one in the body of the sensor (black transmitter). The result can be visualized on the mobile application or on the Giatic 360 web platform. The temperature graph displays both temperature profiles and will highlight the difference between the measurement points. This allows for easy temperature differential analysis between the concrete's core and surface for mass placement applications. In addition, Giatic's AI algorithm, Roxi, has been designed to identify whether it is possible to reduce the cement content in a concrete mixture while achieving the required performance.

—Giatic Scientific Inc., [www.giaticscientific.com](http://www.giaticscientific.com)