

PRECAST PRODUCTS
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The World Leader in RFID Technology for the Manufactured Concrete Industry

The manufactured concrete industry struggles with a lack of real-time management tools to identify and track structures throughout workflow. Current systems are labor intensive, time consuming and susceptible to human error. Often times, this causes lost, duplicated, miscounted inventory and poor quality controls.

About Cast-A-Code

ICT has developed Cast-A-Code®, a revolutionary wireless RFID solution for the concrete industry that uses RFID tags to streamline critical production and inventory management processes.



Cast-a-Code® is an RFID tag sealed in a watertight, dust proof castable inlay that affixes securely to a concrete structure providing cradle to grave traceability. TrackCon®, a PC based system, uses the data from the Cast-A-Code® tag to provide management with complete product identification and tracking through the entire process from fabrication to the yard and eventually to the customer and job site. Management now has a system to report and manage quality control, workflow, inventory and shipping. Not only does this enhance in-plant productivity but it allows the concrete manufacturer to provide value to his customer as well.

RFID is emerging as the preferred technology for identification and tracking. Currently, most manufactured concrete plants use manual systems for materials identification and tracking. The industry tracks concrete structures by marking them with an industrial crayon and/or stenciling. This process will identify the structure for management but requires extensive manual systems to provide some of the basic tracking and status data needed to manage work flow and delivery. To address this problem, the industry has tried to use barcode technology. Although barcode does help address the problems inherent in any manual system, it has run into major obstacles due to the harsh environment of manufactured concrete for any adhesive based tracking solution. Barcode also has line of sight considerations in accessing the encoded label.

State-of-the-Art
Product
Identification
System for
Concrete
Structures

A single tag, Cast-A-Code®, combines human readable format, a barcode and RFID all on one label. This label is sealed in a watertight, dust proof plastic unit that is cast into the concrete structure, allowing it to track the structure from cradle-to-grave and withstand the rigors of a manufactured concrete plant environment.

RFID
Radio Frequency Identification is a data collection technology that uses electronic tags for storing data. The tag is made up of an RFID chip attached to an antenna. Passive tags have no power source but use the electromagnetic waves from the reader to energize the chip and transmit back data.

Like bar codes, RFID tags identify items. However, unlike bar codes, which must be in close proximity and line of sight to the scanner for reading, RFID tags do not require line of sight and can be embedded within an item.

RFID tags hold more data than bar codes, but a major differentiator is the unique serial number in the RFID's Electronic Product Code (EPC) because it allows tracking of individual items. While a UPC bar code might identify a category of product like a 12" manhole connector, an EPC RFID tag can identify a specific, individual connector.

Frequency	UHF 900MHz
Protocol	EPC Class 1 Gen 2 ISO 18000-6C
Data Retention	100,000 cycles/50 years
Operating Temp	-40 °F to +185 °F -40 °C to +85 °C
IP Rating	IP65*

*awaiting results of IP67 testing/undergoing IP67 testing