



HUMBOLDT

HG-4040A Smart Rock™

SmartRock™

Wireless Concrete Sensor for Temperature and Strength Monitoring

“SmartRock reduced our labor costs by 85%. It only took me 30 minutes to install 10 sensors.”

Frank Hoffman,
Superintendent, Graham Construction



Wire-Free & Wireless Technology



Remote Monitoring Capabilities



Easy Activation & Installation



Real-Time Data Collection

DETAILS

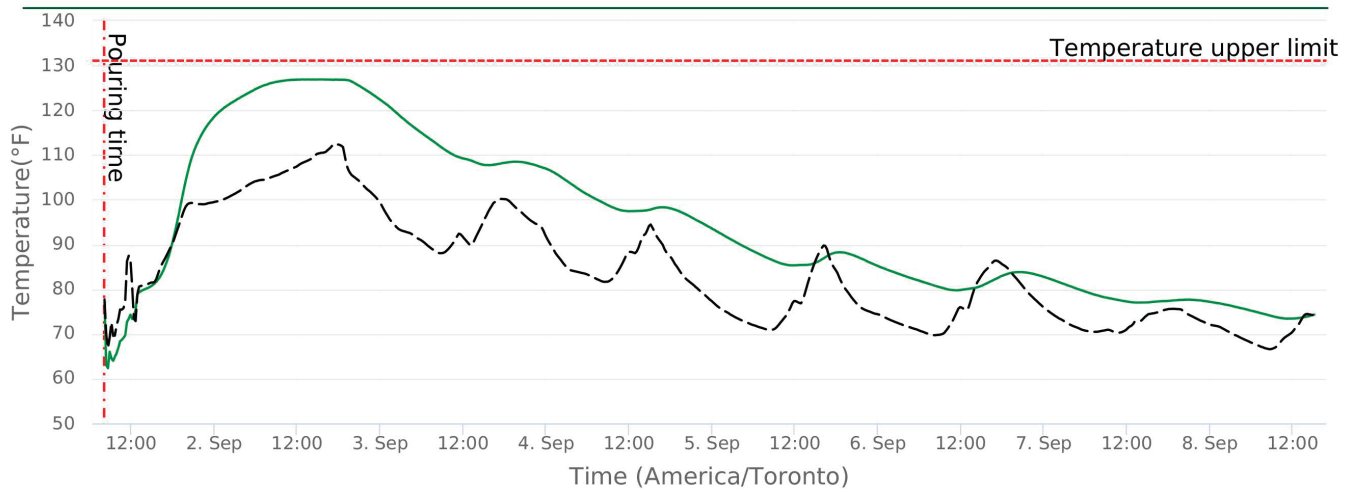
Company Name:	Giatec Scientific
Project Name:	High- Rise Building
Section Name:	Wall- Level 2
Sensor Name:	Surface vs. core
Tagged By:	Project Manager Joy
Pouring Time:	2020-09-01 07:07:27
Concrete Mix:	5000 psi
Threshold:	75% of specified strength (3807 PSI)



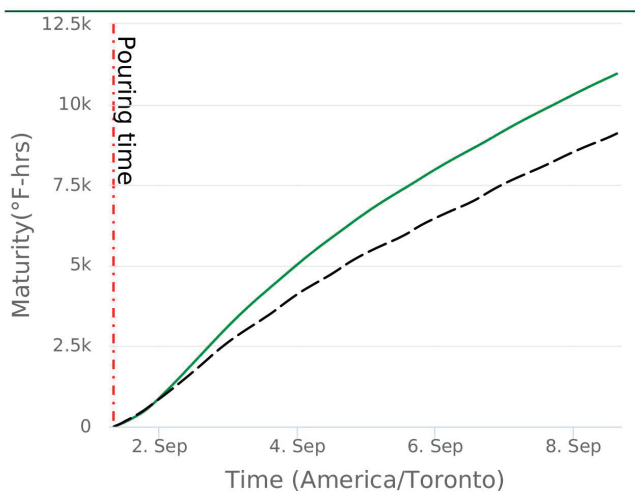
TEST RESULTS

	Cable	Body
Max Temperature:	126.88 °F	112.5 °F
Min Temperature:	62.35 °F	66.58 °F
Maturity Index:	10956.28 °F-hrs	9099.62 °F-hrs
Strength:	5254.56 psi	4999.01 psi

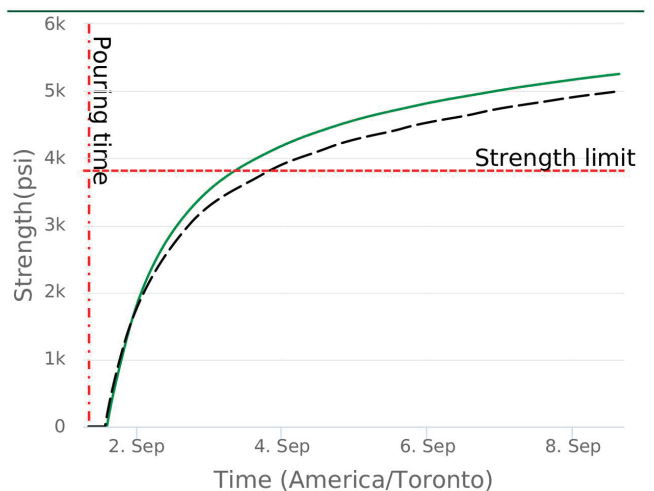
TEMPERATURE



MATURITY



STRENGTH



Break Test

Destructive Test



Maturity Test

Non-Destructive Test

Test Procedure

- Information is gathered through the casting of cylinders taken from the pour and crushed in a compression machine.
- Testing time could be too early or too late
- ASTM C39

- Information is gathered by embedded sensors recording temperature and strength.
- Data is logged and/or retrieved by external device in real-time.
- ASTM C1074

Reliability

- Results may be affected by improperly prepared, handled, and/or tested cylinders.
- Cylinders have small volumes but large surface areas so they retain less heat which results in low breaks.
- Temperature history for cylinders may differ due to curing conditions causing a different rate of strength gain which results in low or high breaks.

- The data is logged without interruption, so the results are generally more consistent.
- The maturity method predicts the actual in-place strength of concrete.
- It can show local variation in strength for different structural locations.

Speed

- Takes time to send samples to the lab and delay to receive results from the lab.

- Strength results are collected in real-time.

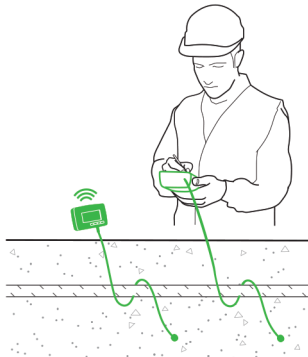
Cost

- Technician cost to cast, collect, deliver, test, and repeat the results.
- Additional labour costs due to uncertainty in project scheduling resulted from delays in getting the lab report.
- Extra financing cost due to late completion time in projects.

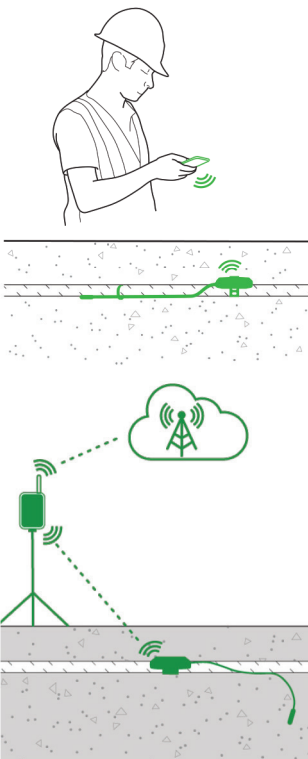
- Up to 50% direct test cost saving for determination of in-place strength of concrete done by on-site people.
- Up to \$10,000 labor saving as a result of more accurate job-site planning for each floor of a high-rise building.
- Significant financial saving as a result of early completion of the project. The actual saving varies depending on the size of the project.

HG-4040A SmartRock™

Conventional Wired Methods



SmartRock Wireless Sensor



Overview

SmartRock is the world's leading wireless sensor for monitoring concrete curing and hardening. This fully embedded sensor attaches to rebar using a built-in strap for hassle-free installation. SmartRock collects temperature data from two points independently: (i) the probe at the tip of the cable and (ii) from inside the sensor body. Calculate in-place concrete strength automatically using the maturity method (ASTM C1074). Your results and your temperature data are always accessible remotely and in real time via the free SmartRock mobile app and the Giatec 360 dashboard.

Features

Software

- Free mobile app for Android/iOS
- Project management tools, including live data sharing
- Smart alerts and notifications
- AI analysis of concrete pouring time and mix calibration errors with Roxi™

Hardware

- Wire-free and wireless technology
- Rugged and fully waterproof, specifically designed to be embedded in concrete
- Two independent temperature measurements from cable and body sensors
- 24/7 remote monitoring capabilities with the SmartHub™

Benefits

- Measure temperature differentials in mass concrete
- Optimize curing conditions
- Accelerate formwork removal and post-tensioning
- Control quality in the field
- Open roads to traffic and finish tilt up construction sooner



Technical Specifications

Reading Range

-22 to +181 °F (-30 to 85 °C)

Measurement Accuracy

± 1.8 °F (± 1°C)

Measurement Resolution

± 0.18 °F (± 0.1°C)

Measurement Frequency

Once every 15 mins

Wireless Signal Range*

Up to 40 ft (12 m)*

Temperature Cable Length

12 in (30 cm) / 10 ft (3 m) /
By request: 50 ft (15.2 m)

Battery Life

Up to 4 months

Data Formats:

Export as PDF or CSV

Standards

ASTM C1074 (Approved by
ACI 318, CSA A23.1, most
USDOT specifications)

* Following installation
depth requirements.

* For longer range options,
contact us.