Determine in-place concrete strength using the Maturity Method (ASTM C1074)

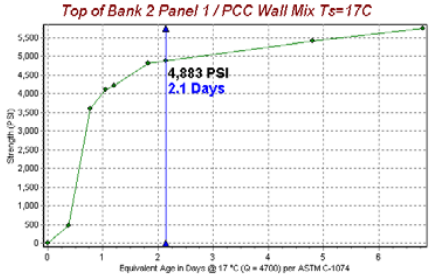
Con-Cure NEX® is ideally suited for monitoring the strength gain of fresh, curing concrete. Using the Maturity Method, Con-Cure NEX® allows users to track the strength of the fresh concrete live, and in real-time, wirelessly. The system can even **send the user a text message and email** when the concrete has achieved target strength!

By recording in-situ concrete temperatures, users are able to accurately estimate the in-place strength of the concrete in real-time. The system is calibrated using strength test samples of the actual mix design in use. In fact, the maturity method has been shown to be SUPERIOR to test samples for in-place strength determination.

Applications:

- Prestressed and precast concrete
- Cast-in-place structural concrete
- Roads and bridges
- Post-tensioned and high rise structures
- Testing labs, R&D, cement plant QC/QA
- Shotcrete
- Hot Weather and Cold Weather concreting
- Massive Concrete placements:
  - o Alerts for peak temperatures are provided
  - o Temperature differentials are tracked as well
- Any time-sensitive placement where knowing the in-place strength quickly is critical

Perfect for Cold Weather Operations



Con-Cure, LLC. PO Box 157 Pioneer, OH USA 419-737-1653

Pioneering Maturity Since 1995

How it works:

Concrete maturity monitoring has been an ASTM Standard Practice since 1987. Sensors are placed into the fresh concrete at strategic locations, and the temperature of the concrete is recorded as it cures. Due to the hydration process and much larger mass of the structure, in-place concrete typically cures 2 to 3 times faster than concrete in a test sample. A maturity system accounts for and quantifies that difference.

The Con-Cure NEX® System features **reusable sensors** and rugged, long-life recording cellular transmitters to send the data directly to the cloud. Maturity software then converts temperature history data into a strength estimate, per ASTM C1074. An unlimited number of users can view this data remotely via simple web based Dashboard software.

Benefits:

- Dramatically shorten waiting times for concrete projects. Why wait for test samples to achieve the necessary strength when the structure is already there?
- Reduce or eliminate dependence on highly variable test samples for determining early-age concrete strength.
- Lowered production costs by optimizing mix designs around in-place strength targets.
- Drastically reduce cold-weather construction costs by controlling energy usage.
- Improve QC programs for hot-weather construction projects, which often suffer from lowered strengths based on poor treatment of test samples.
- Low cost of use due to reusable sensors, rechargeable batteries, and rugged components.

Specifications

	Con-Cure NEX Sensors
Type	Pre-calibrated Thermistors for zero drift. Epoxy-encased NTC, impervious to alkalis in fresh concrete
Temperature range	-100 to +100° C
Length of lead	Standard length is 15ft. (5m). 8ft, 25ft, 50ft, and 100ft lengths are also stocked. Custom lengths available.
Termination	Secure, 100% watertight locking o-ring connector on both node and sensor.
Reusable	Yes, when encased in 0.17" i.d. greased, plastic sleeve.
	Con-Cure NEX Maturity Meters
Recording Interval	6 readings per hour (3x more often than required by ASTM C1074). Simultaneously records to internal SD.
Recording format (°T)	User-defined, °F or °C, switchable at will in Dashboard software
Power source	Rechargeable ultra-high capacity NiMH "D" batteries,12,000mAh each. Up to 14 days between charges.
Data Channels	FOUR: Can record concrete temperatures from THREE sensor locations at once on a single device. Also has an internal channel to record "ambient" temperatures.
Wireless Cellular Format	4GLTE. If you have bars on your phone, the NEX nodes will be able to transmit the data. Nodes also record data to an internal SD card as a back-up, which can be removed for external upload.
Wireless Cellular Range	External Antenna is available for approximately 10x additional wireless range.
Enclosure	Rugged Pelican® Case. 100% Waterproof.
Weight	0.7 kg with batteries
Dimensions	6.8 x4.75 x 2 in.
	Con-Cure Dashboard Maturity Software
Maturity Calculations	Both TTF (Nurse-Saul) and Equivalent Age (Arrhenius) formulas are calculated, switchable at will
Maturity Variables	Datum Temperature (T_D), Specified Temperature (T_S) and Q (Activation Energy), switchable at will
Reporting	Strength estimates are reported in both PSI and MPa, switchable at will. One-click PDF reports.
Data format	Secure, tamper-proof and proprietary SSM (Maturity Curve) and Temperature History files are created.

For inquiries or to purchase, please contact:

In the USA and North America:
Con-Cure LLC
Pioneer, OH
+1-419-737-1653
www.ConCure.com

New Zealand, Australia and SE Asia:
GROUNDTEST EQUIPMENT
Unit I, 3 Hill Street, Onehunga, Auckland 1061
+64 9 634 1509 http://groundtest.co.nz/