



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

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

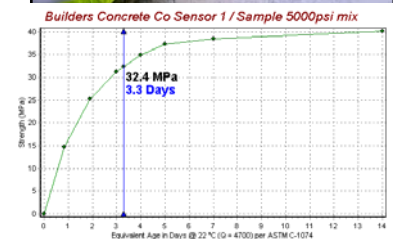


By recording in-situ concrete temperatures, users are able to accurately estimate the in-place strength of the concrete at any point in time. The system is calibrated using strength test samples of the actual mix design in use. In fact, the maturity method has been shown to be SUPERIOR to test samples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



## Applications:

- Roads and bridges
- Cast-in-place structural concrete
- Prestressed and precast concrete
- Post-tensioned and high rise structures
- Testing labs, R&D, cement plant QC/QA
- Shotcrete
- Hot Weather and Cold Weather concreting
- Massive Concrete placements
- Any time-sensitive placement where knowing the in-place strength quickly is critical



# 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, and a maturity system can account for that.

The ZoneCure System features **reusable sensors** and rugged, long-life recording transmitters to send the data back to the user's computer, where maturity software converts temperature history data into a strength estimate, per ASTM C1074.

## 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 and rugged components.

## Specifications

<b>ZoneCure Sensors</b>	
<b>Type</b>	Pre-calibrated Thermistors for zero drift. Epoxy-encased NTC, impervious to alkalis in fresh concrete
<b>Temperature range</b>	-100 to +100° C
<b>Length of lead</b>	5m, but extendable to up to 75m using simple RJ12 connectors and standard "phone" cord
<b>Termination</b>	RJ12
<b>Reusable</b>	Yes, when encased in 0.17mm i.d. greased, plastic sleeve.
<b>ZoneCure Maturity Meters</b>	
<b>Recording Interval</b>	User-defined, from 2/min to 1/day
<b>Recording format (°T)</b>	User-defined, °F or °C, switchable at will in CMT software
<b>Power source</b>	Two standard alkaline "C" batteries, which can last up to ~20-24 weeks in normal use
<b>Data Channels</b>	Two: Can record concrete temperatures from two locations at once on a single device
<b>Wireless Range</b>	100-150m between "hops," line of sight
<b>Wireless Technology Format</b>	RF "Hopping" technology, also known as mesh network topology. Data can be hopped without limitation.
<b>Enclosure</b>	Rugged Pelican® Case. Water resistant.
<b>Weight</b>	0.4 kg
<b>Dimensions</b>	150x100x50mm
<b>Con-Cure CMT Maturity Software</b>	
<b>Maturity Calculations</b>	Both TTF (Nurse-Saul) and Equivalent Age (Arrhenius) formulas are used, switchable at will
<b>Maturity Variables</b>	Datum Temperature (T <sub>b</sub> ), Specified Temperature (T <sub>s</sub> ) and Q (Activation Energy), switchable at will
<b>Reporting</b>	All graphs can be easily "copied and pasted" into any application for easy reporting
<b>Data format</b>	Secure, tamper-proof and proprietary SSM (Maturity Curve) and Temperature History files are created.

For enquiries or to purchase, please contact:

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