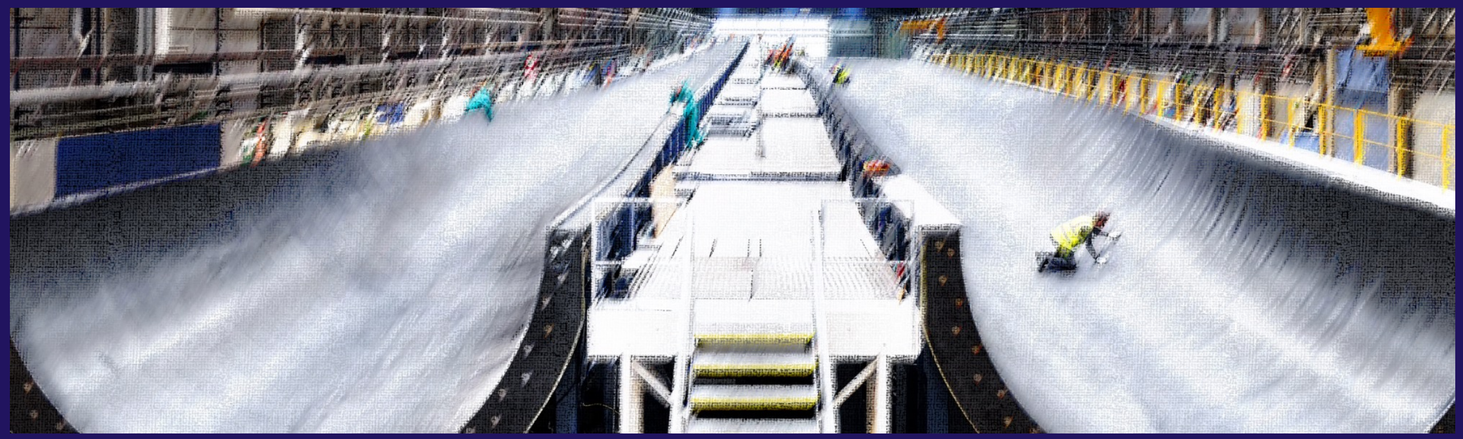
Enhancing Process Control through Advanced RFID Solutions



Collaborative Presentation by Cisper & SensThys

Today’s speakers:

Neil Mitchell
Vice President Sales & Marketing
SensThys

Leon de Ridder
Sales & New Business / Co-Owner
Cisper

Feel free to enter questions through the question panel during the webinar

Cisper's core values

100% distribution

- No competition with customers

Focus on UHF RFID

- Readers
- Antennas
- Tags/Labels
- Accessories

Fully transparent

- PoS to suppliers
- Supplier contacts to customers

Building relationships

- Customers
- Suppliers

SensThys
Sense This World

Design, consulting & engineering

- Focus on wireless sensing

Large Scale Manufacturing

- Quality data
- Process control

Unique

- Technical breadth
- Full solutions

Poll #1:

Why are you attending this webinar?

A: I'm working on a passive sensing project.

B: Out of interest

C: I want to learn more about passive sensing

D: I just wanted to see Leon again ☺

Ideal sensors

Leveraging proven infrastructures

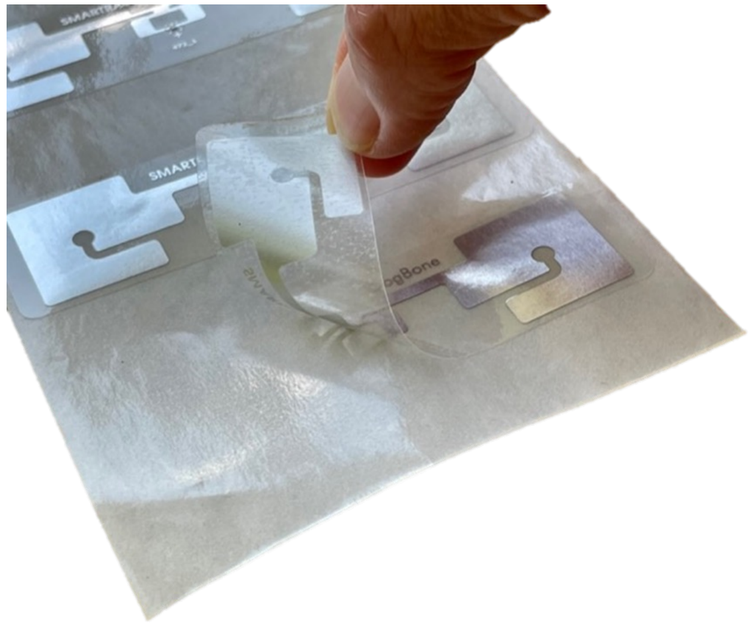
No:

- Wires
- Batteries
- Maintenance

Small

Data logging

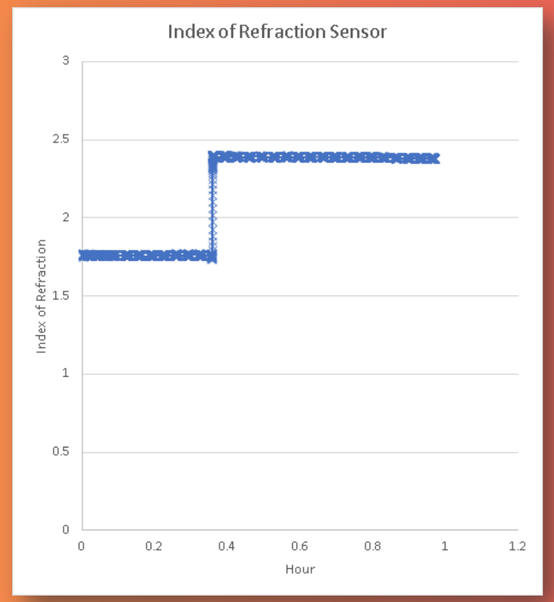
Economics

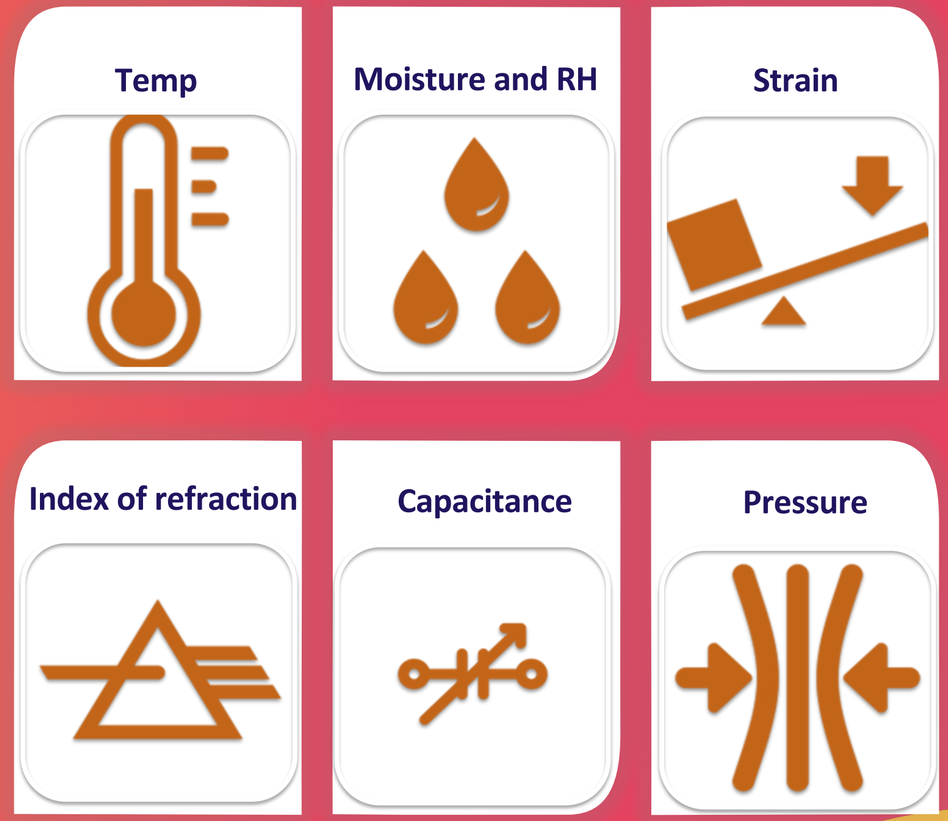


Values measured

Capabilities

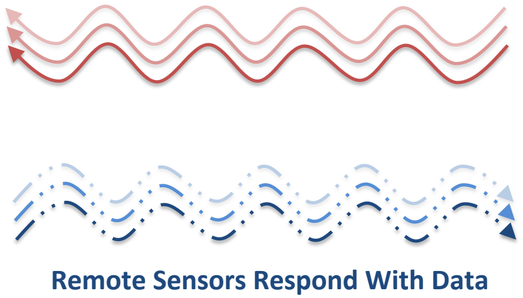
- Condition, location and time
- Real-time
- Embeddable

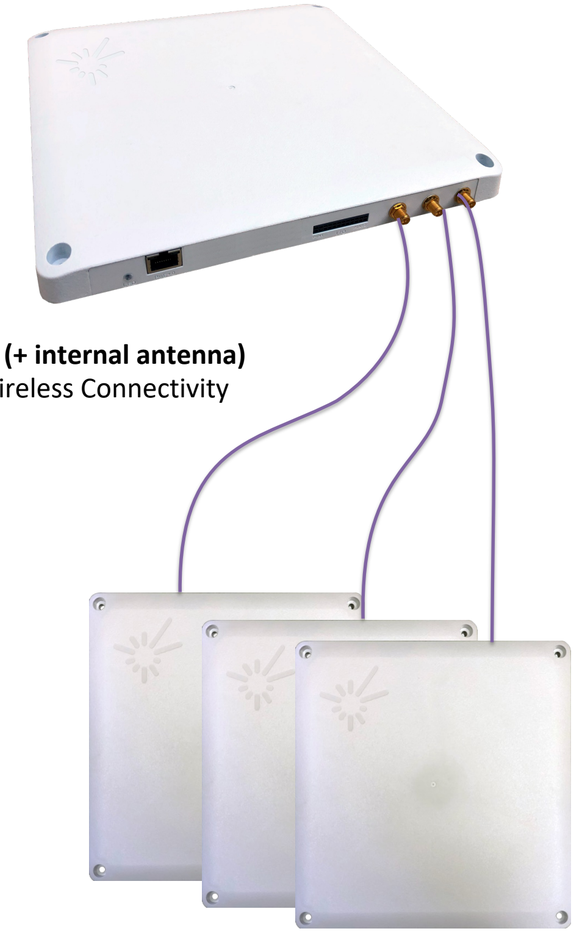




Passive Sensing

Passive Sensors….
Powered by remote transceivers



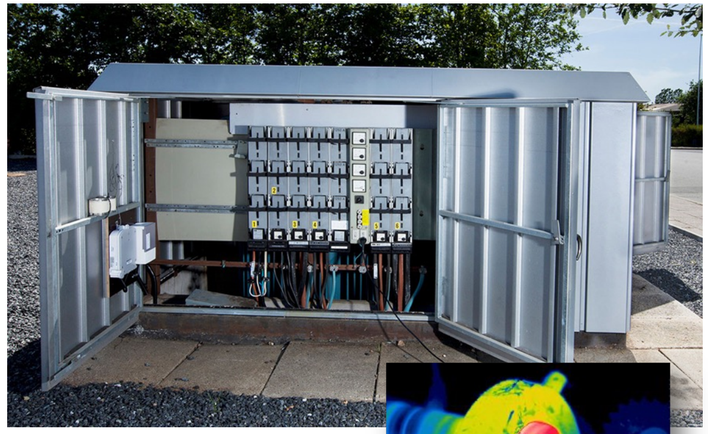


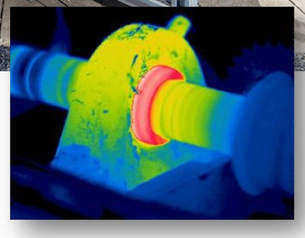
IP67 Reader (+ internal antenna)
- Wired/Wireless Connectivity

Placed on equipment to be monitored…

Each antenna gathers data from
100's or 1000's of sensors

Additional IP68 Antenna
- 3 to 10 meter from reader
- Each antenna covers up to app. 10 m2
- 4 per reader (1 internal)





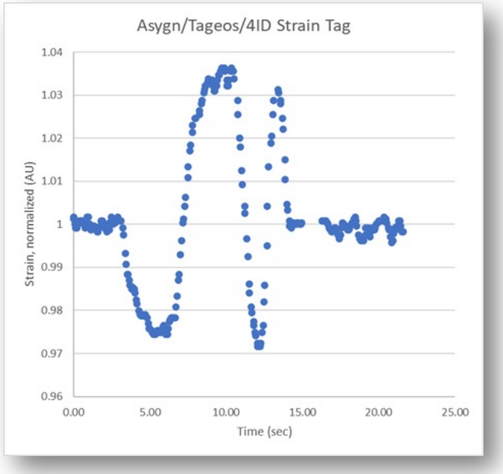
Temperature Tracking

Too hot?
Too cold?
Out of range?
E.g. Power systems

- Relays/transformers/switch gear
- Insulators/Cables
- Container
- Tools
- Motors
- Critical infrastructure

Moisture/Leak Detection

- Electrical systems
- Moisture intrusion
- Coolant leaks
- Weather intrusion
- Seal failure
- No need to open to detect



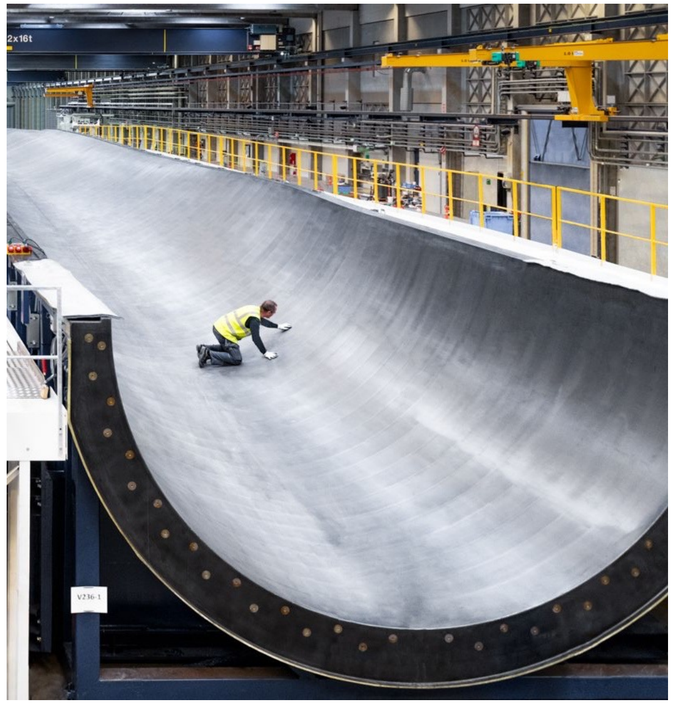
Real-Time Strain Tracking

(Real time strain = vibration)

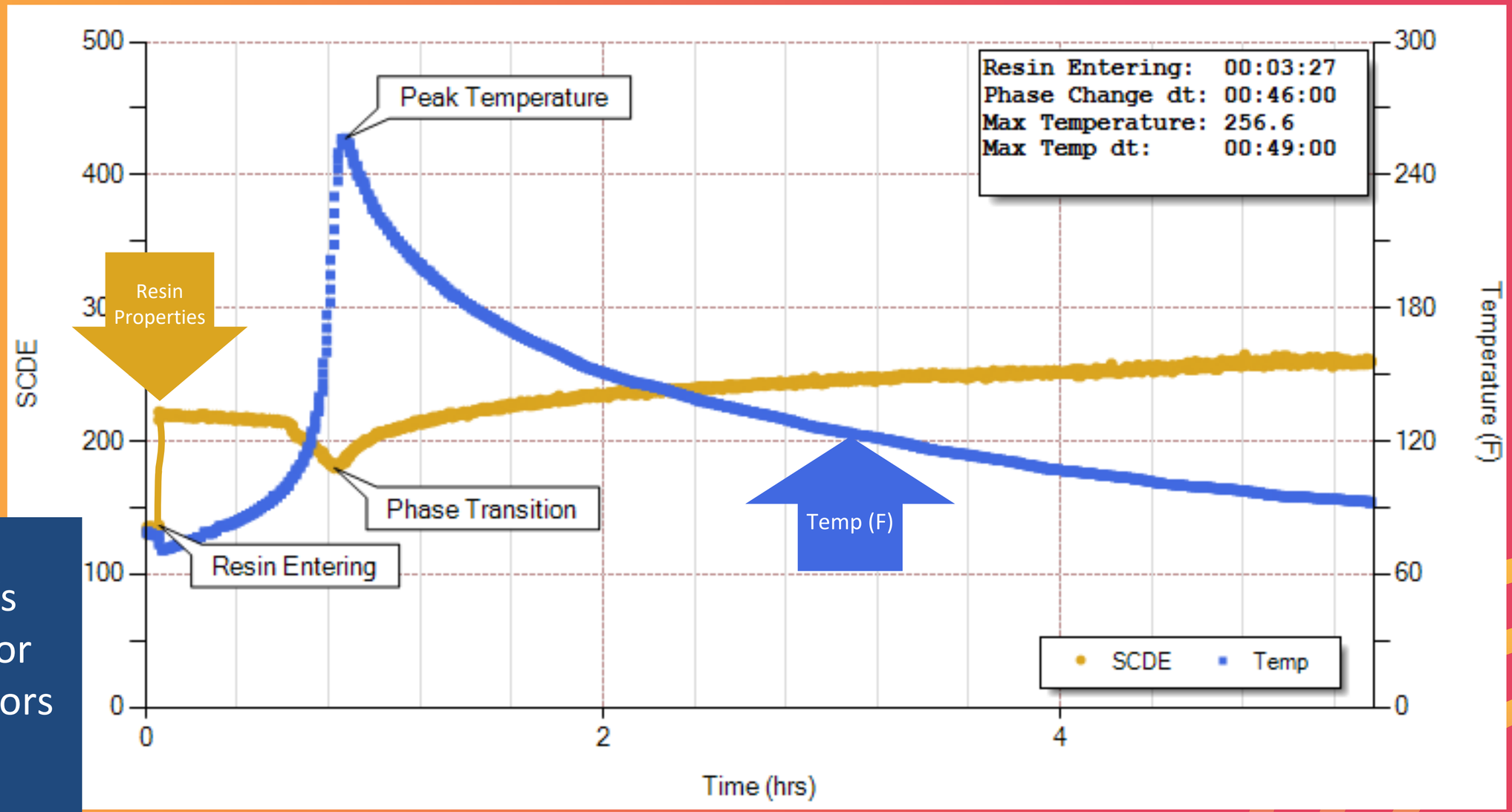
- Detect part damage or aging
- Fast – 10Hz-400Hz
- On aircraft – in flight
- Metal, CF or Fiberglass parts
- Reports temperature at the same time
- Also reports weight

Composite Cure Monitoring & Control

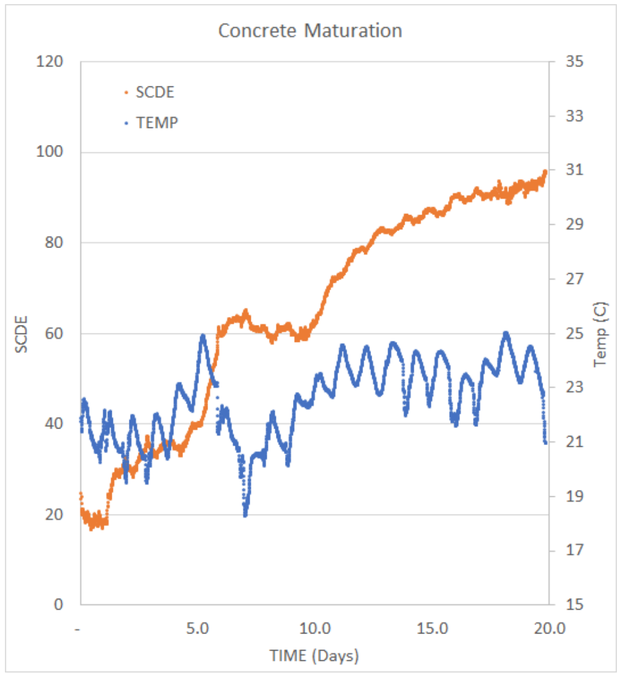
- Closed mold fiberglass
- 100% wireless:
  - Pre-preg to finished CF part
  - Pre-Preg only: UWB/BT - battery
- And no battery:
  - Cure, track, temp, humidity…
  - Wireless weight – inventory tracking
  - Strain – real-time monitoring

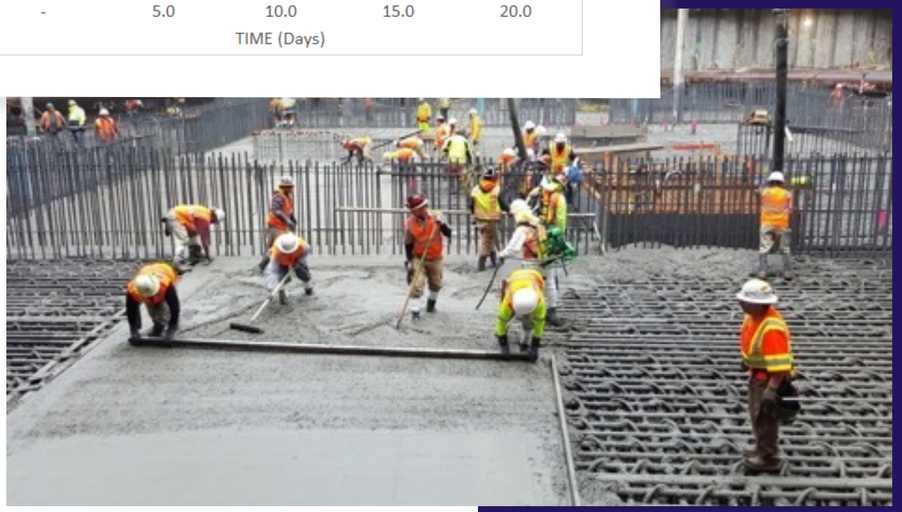


Closed Mold Cure



Custom UI ‘s Developed for Multiple Sensors View





Concrete Maturation

- Direct detection of structure
- Maturity Model
  - Simple time & temp
  - Not a structural measurement
- Estimate cure time
  - Too long = wasted time
  - Too short = quality or re-work/replace

Smart Building Materials

- Paper thin sensors
- Embedded within tiles
- No batteries in sensors
- Sensors report moisture
- Cart/robot reports leaks

Commercial Examples

- Pharmaceutical compound status
- Pipes, building material, automotive
- Cold Chain
- Prepreg out-time monitoring and alerts
- Concrete cure
- Condensation / out-of-spec temp

Poll #2:
What did you learn today?

A: This may be useful for a project

B: I would like to have more information

C: It's interesting, but not something I need right now

Did we provide you valuable insights?

Q&A

Please type in any questions via the question button