ConcreteAI

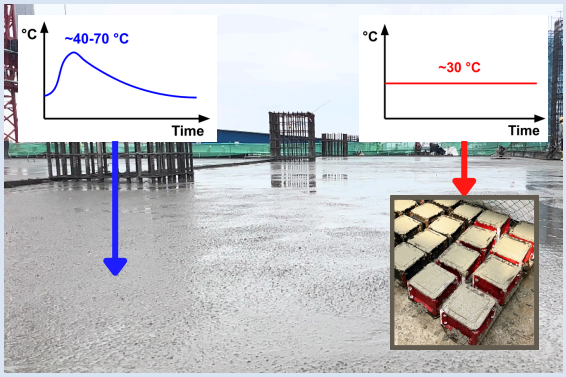
In-Situ Concrete Strength and Temperature

Boost productivity, enhance quality, minimize waste.

WHY IN-SITU CONCRETE STRENGTH

Every builder faces the crucial question of determining when freshly poured concrete has achieved the necessary strength to progress to the next phase of construction. Typically, they rely on standard-cured samples to gauge strength, but these DO NOT reflect on-site conditions accurately due to temperature and volume differences.

In reality, in-place concrete often gains strength more rapidly than standard samples during the early stages, meaning projects could start earlier for quicker progress.



The structure is hot, the cubes are not!

CONCRETEAI SOLUTIONS

1. Real-Time Concrete Monitoring

In compliance with ASTM C 1074, SS EN 13760, etc

SMARTHUB

- Monitor in-place concrete strength, maturity, temperature, and humidity development in real-time 24/7
- Rugged, wireless and compact

2. Temperature-Matched Curing Tank

In compliance with BS 1881:130, SS EN 13760, etc

SMARTCURE

- Samples cured at the same temperature as the internal structural concrete
- Automated matching through wireless communication

KEY BENEFITS

Gain in Construction Time
Shorten every casting cycle by 30% to accelerate the project at the structural stage and 5x cost-savings

Visibility of In-place Quality
Prevent premature early-age concrete activities and reduce safety risk

Reduce Embodied Carbon
Lesser need for high-strength concrete for early-age productivity and promote the use of GGBS

USE CASES

1. **Early demould/lift/transport**: Precast Bridge Segments, Column, Tunnel Segment, etc
2. **Early loading**: Beam, Transfer Deck, Slab Table Formwork, Roof Slab (top-down excavation), etc
3. **Stressing**: Post-tensioning of slab, de-tensioning, etc
4. Others

WORKING WITH

Land Transport Authority — We Keep Your World Moving
ZÜBLIN
SWIA
CHYE JOO CONSTRUCTION PTE LTD
HYUNDAI ENGINEERING & CONSTRUCTION
jtc
Dragages Singapore — A member of Bouygues Construction group
CITY DEVELOPMENTS LIMITED
KAJIMA CORPORATION
UTRACON

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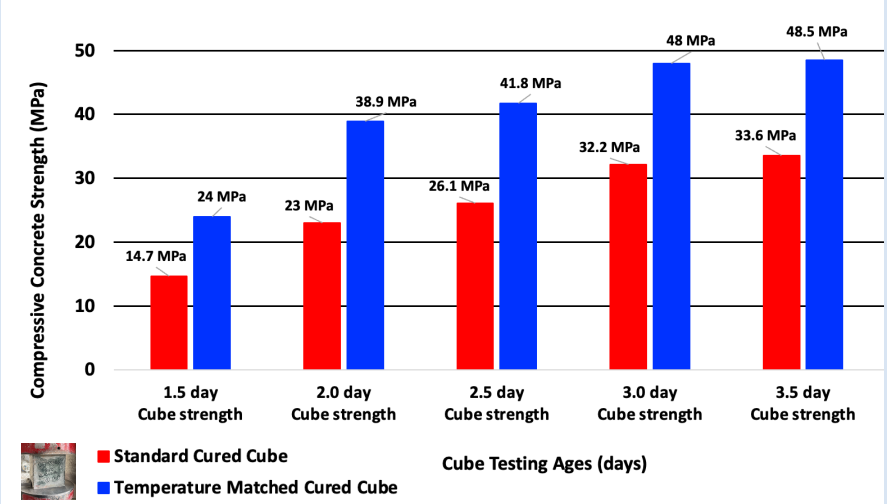
SCAN ME

CASE STUDY - IN-SITU VS SAMPLE CUBE



The comparison indicates that in-place concrete hit the target 50% faster than standard cube samples.

This lets projects move ahead sooner, boosting productivity and ensuring top quality.

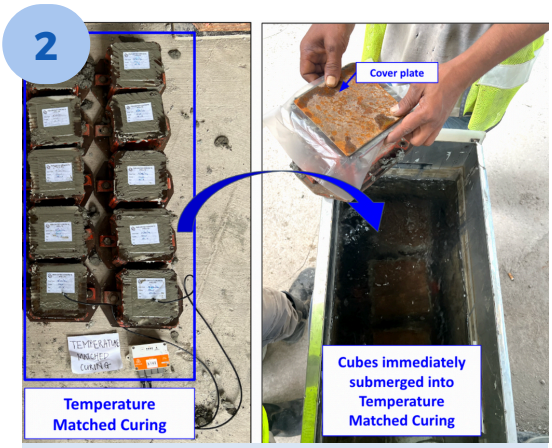
Also worked with 40+ concrete mixes and major suppliers including PanUnited, Island Concrete, Alliance Concrete, Star Ready Mix and Top Mix.

HOW IT WORKS?

1

Install sensors in concrete structure

2

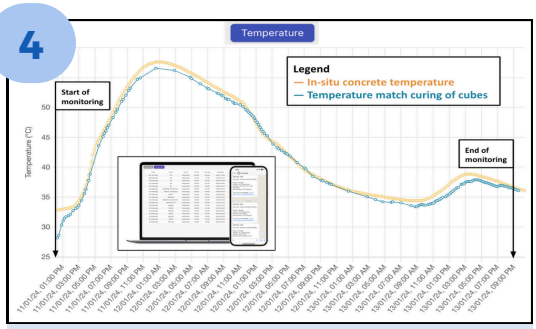


Cast concrete cubes

3

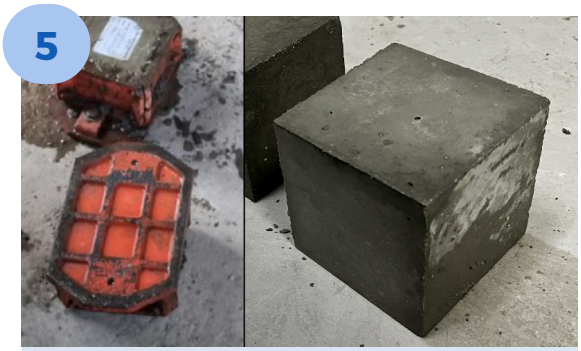
Submerge cubes immediately into tank

4



Start of temperature match curing & real-time strength monitoring

5



Remove cubes from tank

6

Send cubes for testing to verify in-situ strength