

# CONCREMOTE

Concrete Intelligence. Real-time.

**doka**



**Save  
time**



**Increase  
safety**



**Enhance  
concrete quality**



**Reduce  
costs**

**The Formwork Experts.**

# Your expert in concrete

Concremote uses digital sensors to measure the insitu concrete maturity (temperature x time) gradient and with this data it calculates early age strength. Think construction processes forward and boost your productivity.

## When is the **earliest possible stripping time?**

As soon as the concrete reaches your predefined target value, Concremote will automatically notify you in real-time by text message or email. So you can instantly get going on your next construction steps, saving you time and costs on your jobsite.

## Which **concrete mix** will be the most **cost-effective?**

Calibration of your concrete mixes enables you to assess the best mixture. Before construction work starts you can opt for the concrete mix that will be the most cost-effective for your planned cycle time.

## How can you plan in advance to **avoid follow-up costs?**

Concremote measures continuously. If temperature differences in the structure start to go critical, you can react right away with the measures that will protect the quality of your concrete. And you have access to Concremote data as a curing log as the as-built quality-assurance records.

## Universal usage

### Mass concrete



The cable sensor with lost cable has up to three measuring points and is positioned on the reinforcement before the concrete is poured.

### Wall



The wall sensing element for the cable sensor is incorporated directly into the form-facing and repositioned together with the formwork.

### Floor



The slab sensor is placed on the surface of the fresh concrete after screeding.

INTERNATIONALLY  
ACCLAIMED



CN Award 2017 | UK

Wizard of Construction 2016 | Poland

Mohammed Bin Rashid Al Maktoum  
Business-Excellence Award 2017 | UAE

More at [www.doka.com/concremote](http://www.doka.com/concremote)

# CONCREMOTE

With Concremote you can plan your construction project better and no matter where you are, you have access to your real-time data at any time. So you can gauge concrete performance and initiate the necessary measures at exactly the right time.



## 1. Planning

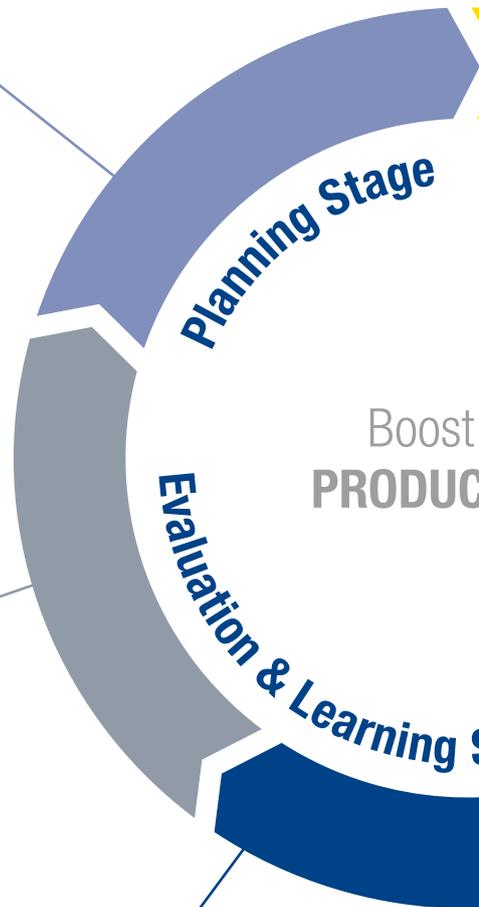
Maximise benefits by using Concremote as soon as you start into the bidding phase and when you move on to pre-construction work. Calibration lets you simulate strength gain and temperature development for each concrete mix and ready-mix plant in advance. Which results in secure pre-construction decisions during the planning of your cycle times. You have more options for selecting a concrete mix, because you make informed decisions on fast strength development vs. high-cost mixtures or slow strength development vs. lower-cost mixtures.

## 5. Learning

Utilise prior Concremote data to optimise your pricing and work flow planning for subsequent steps in the construction process and for further projects.

## 4. Evaluation & Measures

The results of measurement are logged, so you have more certainty and documentary proof of quality. You have hard data to support your decisions in executing critical path activities (stripping, pre-stressing, climbing, curing) at their earliest possible time.



# The method for optimising your construction project



## 2. Measurement

The digital, wireless sensors continuously measure temperature. Your concrete's strength gain is then calculated in the secure Concremote web portal:

- Concremote sensors with wireless data transmission are largely maintenance-free, thanks to their long-life batteries, robust design and reusability
- The sensors are easily and quickly installed. They are simply placed either on fresh concrete or fixed to the wall formwork
- The compressive strength of the concrete is calculated by using the internationally accepted maturity method in accordance with recognised standards such as **EN 13670, DIN 1045-3, ZTV-ING, NF EN 13670, ASTM C 1074 and ACI 228.1R**



## 3. Information & Monitoring

No matter where you are, reliable information is available 24/7 and in real-time through the web portal. You can set an alert so that you are notified automatically by text message or email when the concrete reaches the defined target strength.



# Save time



- Implement shorter cycle times with certainty by measuring early strength gain of the concrete, instead of having to rely on traditional approaches and incremental test cubes
- Switch concrete mix to optimise overall construction time
- Remote monitoring of temperature development and strength gain can be off-site
- Automatic notification in real-time when the concrete reaches the target value, enabling rapid initiation of critical path activities (stripping, pre-stressing, climbing, curing)
- Digital logging of the measured data reduces on- & off-site management



# Increase safety

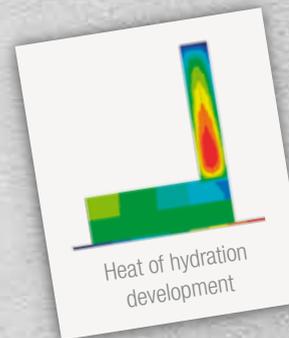


- Reliable quality data from the concrete structure makes for greater security in the decision making process
- Hard data for compliance conforming quality and strength thresholds
- Safe repositioning of the formwork in winter working conditions

# Enhance concrete quality



- Required curing time is measured for quality assurance
- Mass concrete:
  - Heat of hydration is monitored continuously to minimise crack widths
  - Optional automatic control systems for the heating and cooling of concrete
- Support for achieving uniform fair-faced concrete colour tones when stripping formwork at a known level of concrete maturity



# Reduce costs



- Plan cycle times in advance to cut material and labour costs
- Shorter cycles, delivering reduced commissioning of on-site quantities
- Validated concrete quality for reduced concrete finishing costs
- On builds with lengthy cycle times, optimising the concrete mix helps cut costs
- No requirement for traditional, incremental testing of cubes to establish early concrete strength



**600 m<sup>2</sup>**  
less formwork  
per floor

Savings in  
**six figures**

**50%**  
shorter  
construction  
time

# AWO-Föhrenpark Munich | Germany

## Time savings

- About 50 % time saving because of reduced build time of a full 6 weeks by delivery of a 3-day cycle

## More safety

- Early calibration of the concrete mixes meant that the best-choice concrete for the season could always be used
- Documentation and validation towards the asset owner and for the site log

## Cost reduction

- Savings in six figures (EUR)
- Faster stripping of formwork, therefore requiring a third less commissioning quantities – 600 m<sup>2</sup> less slab formwork per floor



## KTM Museum

Mattighofen | Austria

## More safety

- High level of process dependability with reliable monitoring of heat of hydration and strength gain despite difficult climatic conditions

## Enhanced concrete quality

- Support for achieving uniform fair-faced concrete surfaces and colour tones by stripping formwork at uniform concrete maturity

## Cost reduction

- Avoidance of concrete finishing measures
- Detailed records and documentation as a precaution against complaints



## Highpoint

London | England

## Time savings

- Enabling the formwork to be climbed sooner, cutting the 6-day cycle to 5 days
- Saving of 47 construction days for the core

## More safety

- Documented as-built records for all project stakeholders
- High level of certainty in decision making with continuous real-time data

## Enhanced concrete quality

- Monitoring heat of hydration ensures concrete quality and durability



## Muskrat Falls hydropower station

Newfoundland and Labrador | Canada

## More safety

- As-built records are shared with the asset owner

## Enhanced concrete quality

- Constant temperature monitoring in extreme weather conditions ranging from -40 to +20 °C
- Prevention of temperature-induced cracking for significant increase in durability

## Cost reduction

- Avoidance of concrete repair measures

# CONCREMOTE

Optimising your construction.  
Every time.

**doka**

part of  
**upbeat construction**  
[www.upbeatconstruction.com](http://www.upbeatconstruction.com)



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**Improve  
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\* The actual display may differ from the illustration shown here.

# CONCREMOTE

Optimising your construction. **Every time.**

## Generation 2.0:

The proven sensor technology Concremote has been extended by additional features, such as more network opportunities (2G, 3G, 4G, Bluetooth BLE), a LED signal, rechargeable batteries and a more smaller and durable housing. The new version is now available as your reliable concrete intelligence.

## Additional benefits

### Save time

- Immediate information about server connection and measuring activities due to LED signal
- Due to Bluetooth connection data transfer is possible in every area
- Faster availability of measuring results because of customization of broadcast data intervals

### Increase safety

- No loss of data due to notification in case of low battery status

### Reduce costs

- Cost savings and higher sustainability due to rechargeable batteries
- Longer life span because of water proof and dust tight housing



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The accessories of the first version are compatible with the Concremote cable sensor 2.0.



The Concremote slab sensor 2.0 is placed on the concrete immediately after the concreting work.



Digital documentation of measurement results enables notifications in real-time.