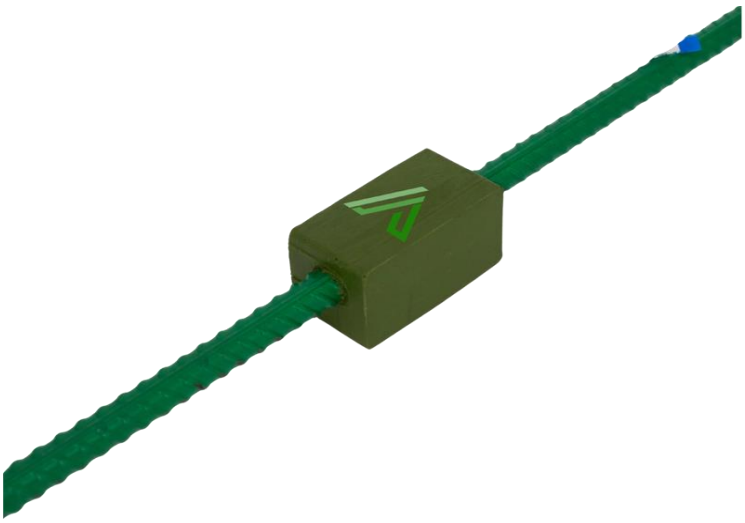
Adventum Tech service: SlabControl 5.0

Sensors: Slabcontrol 5.0

Analytics: Liveload.app

Battery duration: up to 5 yrs

Price is subject to project-specific parameters



The offer includes:

a) SlabControl 5.0 sensor
b) Wireless monitoring of structural temperature, vibrations, inclination, and load-bearing capacity
c) Concrete mix design creation in Liveload.App (client provides strength data for the mix)
d) Automatic concrete strength prediction according to ASTM C1074 standard
e) One-month access to **Liveload.App** system for concrete structure behavior analytics
f) Adventum Tech technical support
g) On-site delivery and sensor installation
h) Travelling costs
i) Base station and Data plan
j) Monthly Liveload.app subscription fee

ADVENTUM TECH

SlabControl 5.0

Technical Datasheet

OVERDESIGN

CO2 FOOTPRINT REDUCING

SAFETY EXCELLENCE

Product Overview

SlabControl is a comprehensive wireless monitoring system designed by Adventum Tech to measure multiple critical parameters of structural elements including temperature, vibration, inclination, loadbearing capacity, bending, and shrinkage. Using real-time data and advanced analytics, SlabControl enables construction stakeholders to ensure structural integrity, safety, and efficient monitoring across various applications including bridges, ports, tunnels, foundations, and concrete decks.

Why Monitor Structural Behavior?

Monitoring structural behavior is essential for ensuring construction quality, preventing defects, and maintaining design specifications. Structural performance is highly dependent on various factors that can affect safety, durability, and long-term performance.

- **Temperature Effects**: Temperature variations affect concrete curing rates and strength development, potentially leading to structural weaknesses or cracking if not properly monitored.
- **Vibration Impacts**: External vibrations can disrupt concrete bonding processes and cause segregation of concrete mix, potentially compromising structural integrity.
- **Structural Movement**: Inclination changes can indicate settlement issues or structural instability that may lead to serious structural problems if left undetected.
- **Load Distribution**: Proper monitoring of load-bearing capacity ensures the structure performs as designed and prevents overstressed conditions.

ASTM C1074 for concrete's maturity

The ASTM C1074 standard outlines the **maturity method** for estimating the strength of concrete. The maturity method is a reliable and simple approach to determine concrete strength development over time, based on its temperature history and age.

Maturity is calculated as a function of time and temperature, providing a direct correlation between curing conditions and concrete strength.

- **Simplicity**: The method eliminates the need for destructive testing and physical sampling during curing.
- **Precision**: Real-time data allows construction professionals to optimize formwork removal, post-tensioning, and load application, ensuring safety and efficiency.

Adventum Tech's **SlabControl** solution automates maturity calculations using the ASTM C1074 standard within Adventum Tech's analytical software, **liveload.app**. The software offers a secure, personalized cabinet to store, analyze, and visualize data.

Key Features

- **Comprehensive Monitoring**: Simultaneous tracking of multiple structural parameters including temperature, vibration, inclination, loadbearing, and deformation.
- **Real-Time Data Collection**: Immediate access to structural behavior data for on-site and remote decision-making.
- **Advanced Analytics**: Automatic calculations and analysis through liveload.app platform.
- **Secure Data Management**: All data is stored and analyzed through the liveload.app, accessible via a secure user interface

Technical Specifications

Parameter	Units	Tolerance/Precision	Signal Intensity	Additional Specifications
Temperature	Celsius	±0.5 °C	15 min (Adjustable)	Thermocouple type: Digital
Tilt	degree (°)	±0.15°	15 min or On-event (Adjustable)	-
Loadbearing	kN	±0.25 kN	15 min (Adjustable)	-
Vibration	m/s^2	±0.15 m/s^2	15 min or On-event (Adjustable)	Measurement Scale: ±2g / ±4g / ±8g / ±16g (Selectable)
Deformation	microStrain	±3 με	15 min (Adjustable)	-

Battery Life: 1 month to 20 years (configuration dependent)

How SlabControl Enhances Construction Quality

- **Early Detection**: Prevents structural failures by identifying issues before they become critical.
- **Quality Assurance**: Ensures adherence to design specifications and safety standards.
- **Process Optimization**: Facilitates data-driven decision-making for construction processes.
- **Risk Management**: Provides continuous monitoring for structural health and safety.

CO2 Footprint Reduction

SlabControl's data-driven insights help optimize material usage and identify opportunities for using alternative, low-carbon materials without compromising structural integrity. This leads to:

- Reduced material consumption
- Lower carbon footprint
- Enhanced sustainability
- Improved environmental performance

Benefits of SlabControl

Technical Benefits

- Real-time structural behavior monitoring
- Early issue detection
- Improved structural safety
- Enhanced quality assurance

Commercial Benefits

- Reduced repair and rework costs
- Optimized construction schedules
- Enhanced reputation
- Insurance benefits
- Competitive advantage in tendering

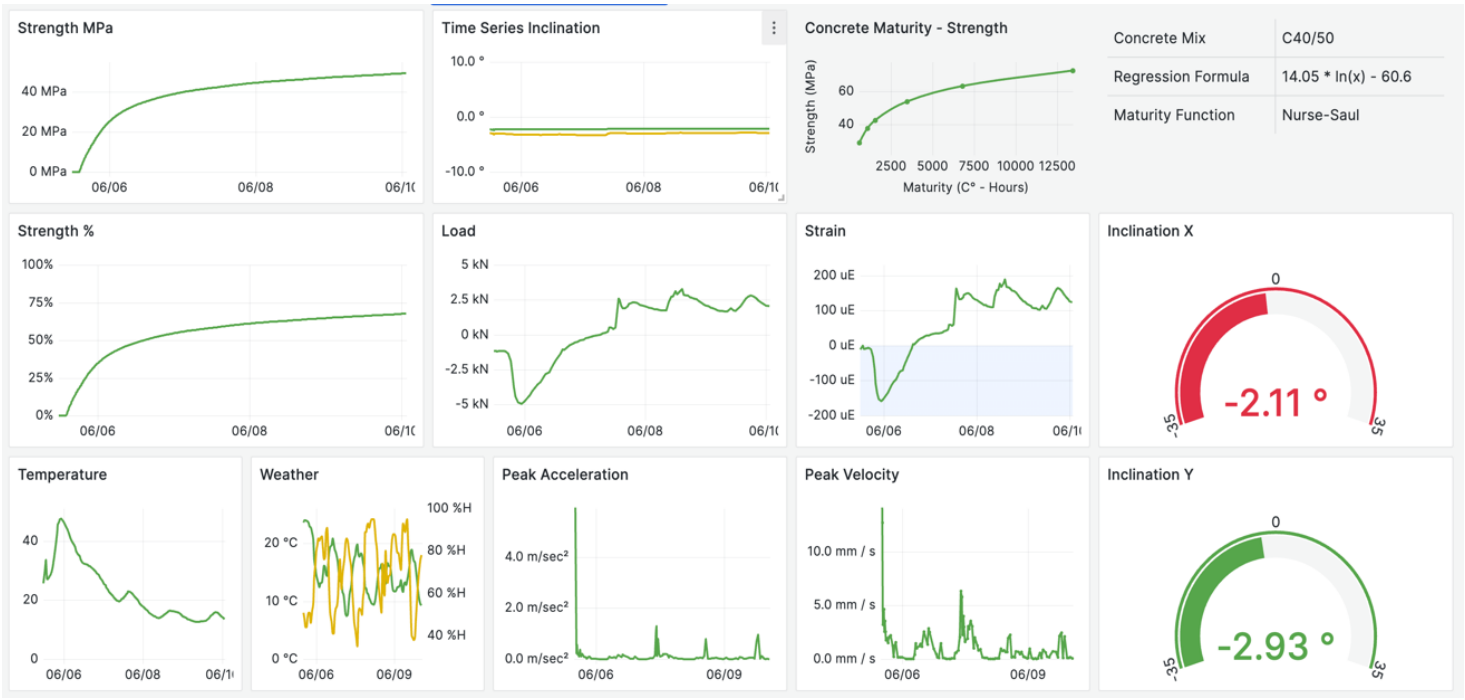
Environmental Benefits

- Reduced material usage
- Lower CO2 footprint
- Promotion of sustainable construction practices

Software Integration

SlabControl data is seamlessly integrated into **liveload.app**, offering:

- Real-time data visualization and analysis
- Secure, cloud-based storage
- Project-specific dashboards
- Exportable reports for documentation
- Compliance monitoring



Contact Adventum Tech

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