



FBG ROOF MONITORING

Protect people and infrastructure from collapsing buildings

PROTECTION AGAINST

clogged roof outlets
 damage in the roof construction
 exceeded snow and water load limits
 temperature influences
 environmental effects
 material aging and fatigue
 natural disaster hazards

INTENDED FOR

building owners
 facility management companies
 structural engineers
 cities
 construction companies

Our comprehensive **Fiber Bragg Grating (FBG) roof monitoring system for concrete, steel and wood structures** helps to cope with security risks and minimize operational disruptions. The system measures and **remotely monitors the deflection of one or more roof elements**. If the maximum permissible load exceeds limits, leading to one of the self-supporting elements bending more than allowed, **our system sends an alarm to the facility management**. This allows the **necessary steps to be taken in time**.

- ▶ variety of roof constructions supported
- ▶ deep insight into the roof's life and long term health
- ▶ automatic warning when thresholds exceeded

ANALYZING TECHNIQUES



strain to monitor changes



monitoring of deflection of one or more roof elements



monitoring of deflection caused by temperature



monitoring of the roof's load



bending of supporting elements

FEATURES & BENEFITS

Fiber Bragg Grating (FBG) technology

FBG technology brings many advantages over the conventional sensing methods, such as immunity to EMI/RFI, high precision, durability, quasi distribution, absolute measurement, compact size, reduced cabling requirement, etc.

Easy to install and maintain

There is a fast, simple and repeatable installation process which saves your time and money. The optical fiber technology is also very durable and can operate with minimal maintenance and servicing.

Long term stability

Our system is highly durable and reliable even in demanding environments. This makes it especially suitable for a long term field operation.

Monitoring of snow and water load

The FBG roof monitoring system enables you to monitor snow and water loads, which could exceed the maximum permissible loads. Our system can thus prevent devastating disasters.

Continuous real time measurement of actual loads

The system monitors any issues that may arise in real time, alerting you of exceeded thresholds immediately if necessary. Furthermore, it enables you to work with collected data right away.

Reduces the number of necessary inspections

Manual inspections, which are costly and often require shutting down the building, are not needed that often. Moreover, an early warning message allows the facility management to take the necessary steps in time.

Assessment and influence of temperature

Wood structures are especially affected by environmental influences such as humidity and temperature. Our roof monitoring system can reliably differentiate between deflection caused by temperature and deflection caused by increased load on the roof.

Early warning of events

The monitoring system is equipped with direct alarm relays for immediate notifications via email, SMS, or other communication interfaces, in case of significant and unusual events.

Easy to use web-based interface

The monitoring system provides a user friendly web based interface with automatic functions for fast system and sensor configuration and settings.

Graphical representation of measurements

Another benefit is a graphical, easy to understand representation of the measured values. At a glance, it is possible to get a quick overview of the roof's condition and load.

No unnecessary roof cleaning and reduced service costs

With the exact measurement of the load on the roof it is always apparent when the critical load is reached and the roof needs to be cleaned. This prevents unnecessary roof cleaning and considerably reduces service costs.

Great sensitivity and accuracy

Our field proven system provides static and dynamic measurements of many FBG sensors at once, with excellent precision and accuracy.

PRODUCTS USED



FBGuard 1550

Highly accurate monitoring system for industrial measurements



Data processing

Universal solution for your data analysis and processing needs



GrafFlux

Data visualization, storage and analysis service



L-Bracket sensor

Strain sensor for constant structure behavior monitoring



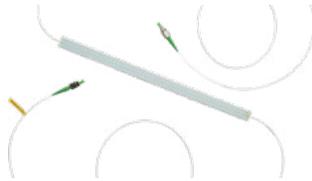
Displacement sensor

Displacement sensor for continuous structure behavior monitoring



Anchor sensor

Strain sensor for structure behavior monitoring



Composite sensor

Strain sensor for composite structures



FBG temperature sensor

Structural health monitoring based on temperature measurements

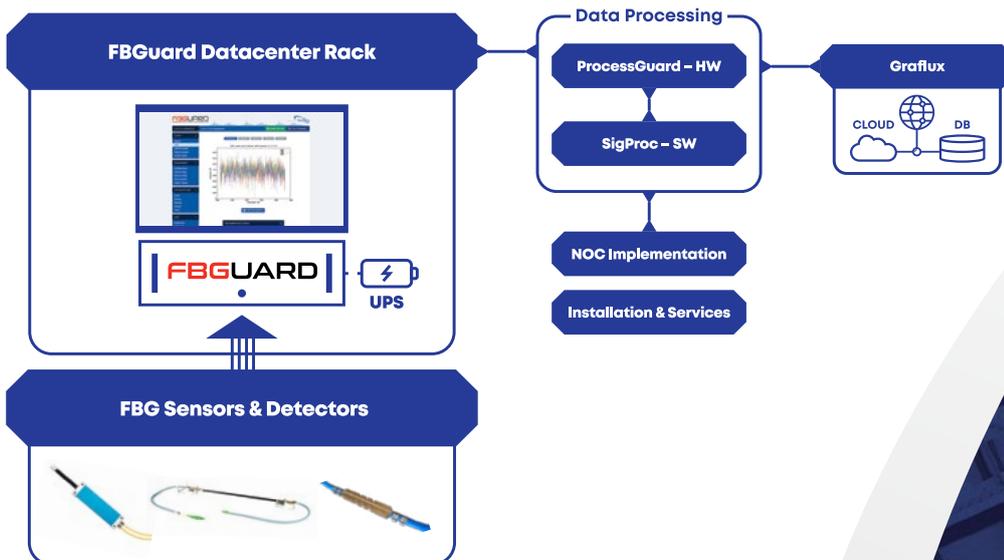


Tiltmeter

Tilt sensor with temperature compensation

APPLICATION SCHEME

Example of a typical setup. Choose the project scale that you prefer.



GET IN TOUCH WITH US
and we will recommend the most suitable solution for your project.

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