

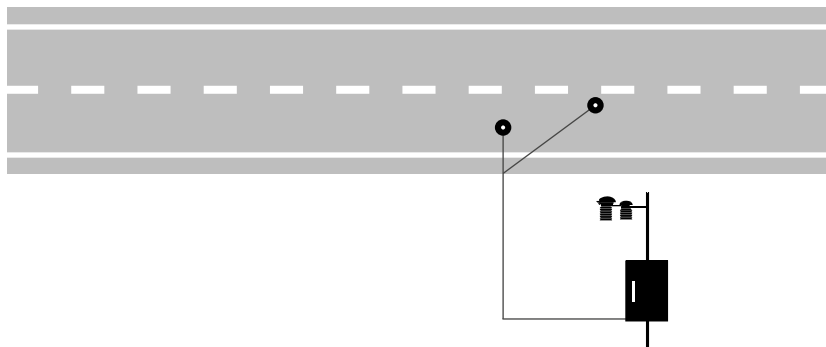
Ice Early Warning System



**Intelligent detection and management
of road surface conditions**



Ice Early Warning System offered by Boschung allows winter maintenance operators to prevent from ice danger on roads – by means of the unique way to precisely measure freezing point temperature, the active pavement sensor technology.



Boschung's Ice Early Warning System represent the most complete range of products for ice prevention and road maintenance. The unique measurement principles and technologies used in the sensors, as well as the associated electronics and software represent the best technologies for the ice early detection.

De-icing activities by spreaders or by Fixed Automated Spray Technology (FAST) systems can be launched and managed more effectively thanks to the Ice Early Warning System. This represents a significant advantage for the security of the road users. Likewise, the consumption of de-icing agents is optimized against real needs, thus protecting the environment and optimising the operating costs.

Precise detection of surface conditions

Ice Early Warning System from Boschung is composed of several elements:



The Remote Processing Unit can integrate various sensors thanks to a series of different interfaces, handling multiple protocols. To reduce maintenance costs, remote service diagnostics are available.



Active and passive pavement sensors provide a wide range of data on pavement condition according to EN 15518 norme. Data such as freezing point temperature, surface temperature, road state, water film thickness, rest salt, etc.



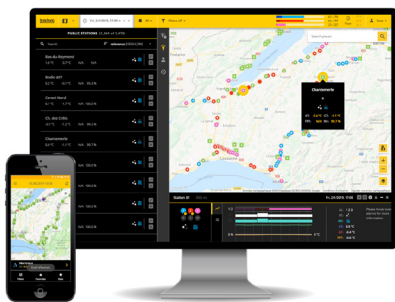
The r-weather is an all-in-one, sensor measuring air temperature, relative humidity, dew point, air pressure, precipitation intensity, type and quantity, as well as visibility. In addition, this sensor has a self-cleaning function and is maintenance-free.



The r-condition is a non-invasive sensor that defines the road surface condition and its temperature. This sensor can be combined with the r-weather.

Efficient operations with bVision

Data of Ice Early Warning Systems are acquired by the bVision management platform.

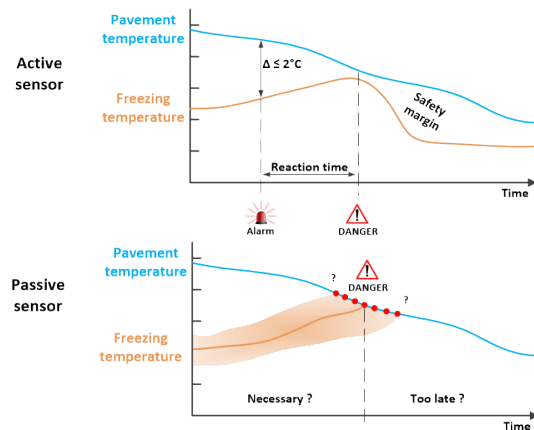


bVision is a web-based platform, which contains several tools and software for the analysis, decision-making support and reports for road and runway operations in winter and summer. It gathers live and historical information of Boschung's Ice Early Warning System and vehicle intervention data.

Early detection thanks to active sensors

The active technology automatically cools the surface of the sensor down to the freezing point, which is measured directly and without modification.

This precision is elementary for assessing the expected risk of ice. Only a comparison between the freezing point and the evolution over time of the effective pavement temperature allows early detection, which gives the winter service time to make decisions and take preventive measures.



- Measurement of freezing point temperature with 0.5°C accuracy
- Active sensors measurements independent of the de-icing agent
- Active-passive and active-active combination – accurate information to decision makers
- Time and location specific risk assessment thanks to active technology enables involved resources to be focused on critical areas.

Ice Early Warning System as the trigger for automated spraying systems

The high degree of automation and extremely short reaction time of Boschung's Fixed Automated Spray Technology (FAST) systems are possible thanks to Ice Early Warning Systems. The detection of specific weather and road conditions triggers alarms that launch the execution of configured spraying programs.

Experience at the service of security

Boschung's Ice Early Warning System is the results of almost **40 years of experience** in road condition monitoring for winter maintenance operations. The significant know-how gained with long-term customers has been combined around the globe with state-of-the-art technology.

- Long distance from measuring station to sensors possible.
- Sensor with monolithic construction, highest waterproof and high electrical protection.
- Active sensors tested by independent laboratories, with high accuracy reached for any kind of deicers.
- No calibration needed and limited maintenance required on-site.
- Sensors can be installed directly in the pavement or in special casing.



boschung

Aéropôle 108
CH-1530 Payerne
Schweiz / Suisse / Switzerland

Tel. +41 26 460 44 11
www.boschung.com