Controlit® & VILPE® Sense

Inspection and moisture removal system: keeping your roof safe

A smart roof can detect even the most minor damages. It also monitors the condition of a roof's structure, and removes excess humidity. Thanks to the smart roof, leakages can be prevented before they even appear.

The best way to inspect a roof's condition
– detects all damages, even those invisible to the naked eye

Constant structural monitoring
– removes moisture automatically if humidity levels rise

The Controlit and VILPE Sense solution provides you with a more efficient tool to monitor and control your roof's condition.

Firstly, Controlit allows for more efficient roofing inspections. It ensures that even the most minor damage is identified.

Secondly, VILPE Sense will continue to monitor the roof's structure and remove moisture daily after a roofing inspection has been carried out.

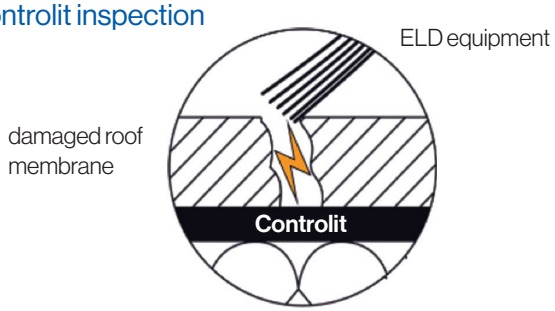
Together, Controlit and Sense offer a way to locate hidden damages and maintain day-to-day control over roof structures.

How does Controlit work?

The main component of Controlit is a high-quality, electrically conductive underlay which is installed under a waterproof layer. After Controlit has been installed, the roof is swept with special ELD (Electric Leak Detection) equipment during inspections.

This special ELD (Electric Leak Detection) equipment gives an audio and visual signal when it detects damage to a roof. If the roof is watertight and its waterproofing membrane is completely intact, however, there is no electrical connection between the ELD (Electronic Leak Detection) equipment and the conductive Controlit underlay, and therefore no signal is given.

Controlit inspection

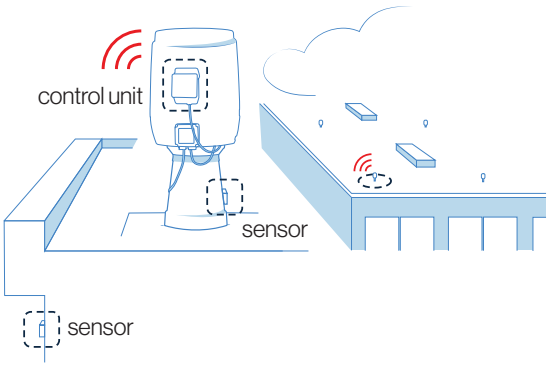


How does VILPE Sense work?

VILPE Sense measures the relative humidity and temperature of roof structures. The solution consists of VILPE's roof fan with an EC motor, combined with a control unit and two or more sensors. One sensor is installed on the roof in the open air, and the other is installed within the roof structure.

When the sensors detect an increase in humidity levels within a structure, the roof fan adjusts to the optimal level to remove excess moisture inside the roof. When this excess moisture has been removed, the roof fan returns to its normal level.

VILPE Sense



Controlit + VILPE Sense = The smartest roof solution

Controlit can detect damages in a roof membrane, but it does not detect moisture. To combat this problem, Controlit can be combined with the VILPE Sense solution, which alerts the user to increased moisture in roof structures so they can be inspected.

Because VILPE Sense is connected to a roof fan, it can also dry the insulation layer when necessary, thus providing aid for leakages whilst also preventing moisture damage caused by natural phenomena (such as humid weather).

Installation and inspection

Controlit can be installed by your main roofing installation company, and the Controlit Factory provides on-site training to any new roofer working with the product.

After Controlit has been installed on a roof, there are several options for future roof inspections. For example, a special inspection company can provide this service, or it can be conducted by either the roofer or property owner. In any case, the Controlit Factory or one of its local partners provides training and leases the necessary equipment.

The VILPE Sense system can be installed by either roofing professionals or DIY installers. VILPE Sense's sensor data is stored in the cloud service, where users can see the temperature, relative & absolute humidity, mould index and roof fan motor speed.

In addition, the system will automatically alert the primary user if predefined alert values are exceeded. The primary user can also easily share a link to the data.

Case examples

Brand new roof contained hundreds of holes

An internationally well-known company was building a new production plant of approximately 10 000 m² in one of the Baltic states. The company wanted to ensure that the roof was watertight, and used Controlit in order to assess the roof's condition. After the structure's roofing had been installed, initial inspections took place and found only a few minor damages on the roof. These were soon repaired, and other work on the roof continued.

When this other installation work had been completed, it was time for a second inspection. This time, the results were very different: approximately two hundred damages were found. Thanks to the inspection, these holes were quickly located and fixed, before they could cause more serious damage to either the building or – more importantly – the company's highly sensitive and expensive equipment underneath the roof.

Fault detected and repaired thanks to VILPE Sense

VILPE Sense was recently used in the buildings of a public institution. The system was installed in three different buildings, making it easier to compare data: this comparison showed that the absolute humidity inside one building was higher in rainy weather than in the other two buildings.

This suggested a fault in this building's roof structure, allowing unwanted moisture to enter. The leak was soon located and repaired, and after the renovation this building's absolute humidity remained at the same level as that of the other two buildings.

Benefits

Enables the location of even the smallest and most hard-to-find damages in roofing structures, and also prevents leakages developing on your roof.

When problems are detected in time, the need for unanticipated and costly renovations is reduced or even eliminated.

Roof inspections are fast, simple and do not require the opening of roof structures. This also allows inspections to be conducted more systematically.

Roof inspections are also more easily available, as you can conduct them yourself.

Repairs can be directed immediately to the right place, so they are cheaper and faster to implement. Studies or repairs of structures do not need to be conducted on the basis of guesswork alone – objective, measurable data is available to support decision-making.

Increases the resale value of the property. For sales purposes, the condition of the property can be proved with reliable data. The need for difficult roof structure inspections can be reduced.

Insulated layers and structures are automatically ventilated – for instance, after rain. This prevents the formation of mould or fungi in the structure. The insulation layer's performance will also improve – moisture in an insulation layer significantly reduces its insulation capacities, which increases the building's total energy consumption.'

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