

DampGuard®

Like bacteria and viruses, moulds are micro-organisms. Micro-organisms are present everywhere, and our bodies are constantly exposed to them. Moulds thrive well in environments where humidity is in the range of 70...80 %rh. To stop the formation of mould by means of ventilation, it is not enough just to know the room humidity. One also needs to know the humidity at the wall's surface, as this is where mould will grow. Mould growth in buildings can result in significant repair costs, especially in apartment buildings.

Moulds produce tiny spores, which are emitted into the air in enormous quantities, and so they can be breathed in. Because of their surface characteristics, these spores can, amongst other things, trigger allergies similar to those caused by pollen from plants. Damp and moulds in closed environments can have a significant effect on occupant health. According to recent research, damp and mould increase the risk of suffering with asthma by 50%.



DampGuard®

- Prevention of damage to walls caused by damp
- Direct measurement of wall humidity
- Instant detection of condensation
- User friendly indicator of the risk of damp
- Prevention of moisture related problems in badly insulated buildings
- Resolution of conflicts between tenants and landlords
- Saves heating costs
- Protects health, ideally suited for people prone to allergies and asthmatics
- Simple to use
- Swiss made

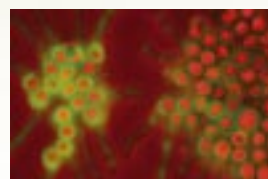


DampGuard® works!

In representative research, it was established that in Germany alone, almost one third of all dwellings are affected by damage caused by damp, 6 to 9 % of them with visible mould. Health authorities, consumer organisations and organisations for the protection of tenants often recommend buying simple hygrometers. In practice, experts could show that mould formation cannot be prevented effectively by using such instruments, as they do not measure the critical surface humidity of the construction material. The effective humidity of the wall and wall coverings can only be measured with the patented DampGuard.

In close cooperation with the German laboratory Dr. Missel, ROTRONIC has developed a unique indicator for indoor wall surface humidity measurement. The sensors of the device are in close proximity to the surface. DampGuard® indicates the actual surface humidity by means of simple LEDs, and helps the occupant to manage the critical surface humidity. The current humidity value is displayed by 4 differently coloured LEDs on a 4-point scale:

LED's	Humidity	Growth of mould	Action
●	< 70 %rh	Not possible	none
●	70...80 %rh	Critical range	Ventilation
●	80...100 %rh	Possible	Ventilation
●●	90...100 %rh	Highly likely	Ventilation



Technical note: In order to ensure accurate determination of the wall surface humidity, the sensor is designed so as to allow the water molecules to diffuse through the sensor. This prevents a microclimate under the sensor. This is possible only with ROTRONIC Hygromer®-sensors.

DampGuard®



Cold air can hold much less moisture than warm air. At 0 °C, the air can hold a maximum of 4.84 g water per cubic metre, which corresponds to a relative humidity of 100 %rh. At an ambient temperature of 23 °C, 100 %rh is equal to 20.5 g/m³ that's over four times more!

Understanding these correlations is important, because it becomes evident that ventilation is always effective in winter time, even if it's raining outside (outside humidity ~100 %rh). The cold air that is brought into the interior contains less water vapour than the warm interior air. When warming up, the air absorbs water vapour, which is released when ventilating again.

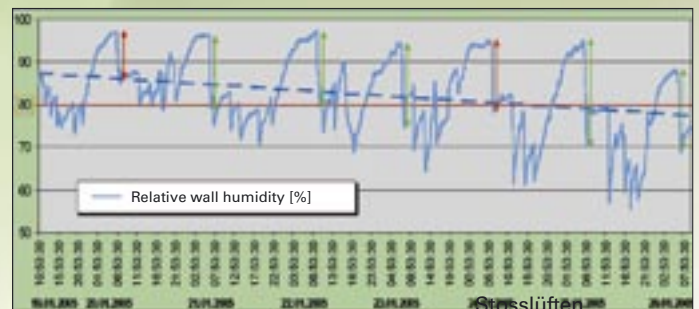
Exchange of humidity at different conditions:

Exterior Temp / rel. humidity	g/m ³	Interior Temp / rel. humidity	g/m ³	Yield from interior to exterior
-20 °C / 100 %rh	1.07	20 °C / 70 %rh	12.09	11.02 g/m ³
-10 °C / 100 %rh	2.36	20 °C / 50 %rh	8.63	6.27 g/m ³
0 °C / 100 %rh	4.84	23 °C / 70 %rh	14.38	9.54 g/m ³
10 °C / 100 %rh	9.39	23 °C / 50 %rh	10.27	0.88 g/m ³

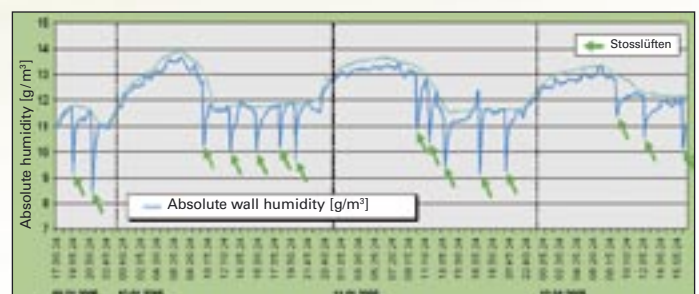
Even under the worst conditions, humidity is still transferred from the interior to the exterior, provided the interior conditions are warm.

DampGuard® assists in the development of a ventilation plan, which is energy saving and at the same time suppresses the growth of mould very effectively.

SPECIFICATIONS:	
Humidity sensor	Capacitive humidity sensor Hygromer® AC-2
Indicators	4 LEDs, green, yellow, red, red
Accuracy	80 %rh ± 2 %rh
	<70 %rh >90 %rh ± 4 %rh
	<30 %rh ± 6 %rh
Adjustment at	80 %rh
Display interval	5 seconds
Supply	2 x AAA batteries 1.5 V
Battery life time	approx. 1 year
Dimensions	61 x 58 x 50 mm
Material	ABS
Protection rating	IP50 protection against dust and contact
Colour	Signal-white RAL 9003
Order code:	DampGuard-1
Scope of delivery: Instrument, adjusted, ready for use after inserting the batteries. Includes two batteries, 1 screw and 1 dowel, damp brochure with instruction manual and information regarding the correct use of the DampGuard®.	



The diagram above shows a huge surge of humidity in the air during the night hours. During the measurement period ventilation optimisation was achieved; and humidity was reduced by approximately 10 %.



This diagram shows that the wall surface climate cannot be changed simply by ventilation. The reason is a high degree of humidity in the wall. In such case, one should contact the landlord or install a dehumidifier.

