



Prevention of
mold and building
fabric deterioration

Stella Beer, Belgium



Stella Artois is Belgium's largest brewery, and it produces light beer which must be stored in large vessels at low temperature for several weeks before bottling.

At the brewery in Leuven, several storage vessels protrude through the wall into a corridor and are cooled to +2 °C by air which is chilled to -2 °C and circulated through the storage buildings. In the cooled building, with surface temperatures at +2 °C the air can contain only 4g moisture/kg air, but in summertime, due to its higher temperature ambient air can hold more than 15g moisture/kg of air. Unless the air conditioning plant is capable of removing sufficient moisture, condensation cannot be avoided.

Case study

Brewing condensation control

Advantages:

- Prevent condensation
- Improve hygiene
- Stop mold growth
- Reduce refrigeration defrosts



A cleaner environment

When ambient air is allowed to infiltrate into the buildings, condensation problems occur on the vessels, pipework and the cold wall surfaces in the corridors. This is unavoidable as the buildings are not hermetically sealed, also door openings for operators and maintenance personnel add to the water vapor introduced by infiltration that will cause condensation.

Condensation and high humidity are ideal conditions for mold and bacterial growth, and at Leuven all corridors were washed with hot water and detergents once or twice a week to prevent this. These cleaning regimes exaggerate the problem by increasing the amount of water needing to be removed.

Regular decoration to the structure was required due to the deterioration experienced as a result of continual high humidity and condensation.

The traditional means of dealing with condensation involved ventilation air to carry away the evaporated moisture. However, unless the air being introduced has a moisture content, with a dew point well below the temperature of the storage vessels (occasionally occurring during winter) this is a totally unpredictable approach.



The right dehumidification

Munters installed two 1,200 m³/hr dehumidifiers with the drying time reduced to 1 day after washdown, and the corridor maintained at 40% relative humidity (RH) between 5-10°C, the result being the total prevention of condensation.

Stella Artois decided to install a further two Munters systems each handling 15,000 m³/hr maintain a constant 40% RH at 10 °C to speed up drying after washdown. The efficient drying of the corridors and low humidity level, now virtually eliminates the risk of microbiological growth and maintenance costs have been reduced.

Reduced health risks

The ability to provide adequate and efficient drying to the corridors and maintain a low humidity level, now virtually eliminates the risk of microbiological growth and maintenance costs have been reduced.

As the humidity level is now controlled to eliminate condensation and dries standing water in one day, the previous maintenance requirements have been dramatically reduced. Redecoration is no longer a frequent necessity.

The refrigeration plant for controlling temperature in the vessel building operates at much more efficient levels now. As the lower moisture level in the corridors produces less moisture migration and infiltration, frosting on the evaporators has been reduced and less defrost energy is needed to remove it.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com/food

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