



Mold and degradation building protection

The German supermarket chain Lidl dates back to the 1930s. The first Lidl store opened in 1970 and today there are more than 10,000 Lidl supermarkets in more than 20 countries. Denmark's 94 stores serve Danish shoppers every day, with more stores coming. Every Danish Lidl supermarket has its own Bake Off facility. All with the same concept offering more than thirty different freshly baked bakery products. There are dedicated Bake Off facilities in the supermarket area. They feature a -24°C cold store and a smaller preparation room where the ovens are placed. And the cold store holds the frozen, ready-to-bake products that are placed in the preparation room before baking.

High risk for mold growth

Lidl Denmark was aware that the void spaces around cold store would pose a risk for condensation and mold when they started introducing Bake Off in their shops.

Cold store is a structure built into concrete/brick housing with a void space around all six surfaces. The height on the upper void space differs, depending on the building in question, but the void space on the remaining five sides is 10-20 cm wide. This is a normal cold store design, which prevents the cold from the outer surface of cold store walls to directly transfer cold onto neighboring rooms, building structures, and foundations. The air around the cold store would be approximately 40°C warmer, compared to the -24°C inside, when placed within the supermarket. This leads to condensation on cold surfaces in the void space.

QUICK FACTS

- ✓ Prevents void space condensation around cold store
- ✓ Protects against bacterial growth
- ✓ Easy to install and minimum maintenance
- ✓ CS_Lidl Supermarkets_en.pdf

Lidl's technical department worked with contractors to find a solution to fight condensation and Munters' desiccant dehumidifiers were the perfect solution.

Condensation elimination

Lidl decided upon one standard concept for all their Bake Off installations that included a Munters desiccant dehumidifier.

Munters' ComDryM210X was selected since this small unit is wall-mounted and fits perfectly into the void space, taking up very little space.

Placing the unit on top of the cold store requires simple ductwork that distributes dry air from the dehumidifier along the cold store outer walls.

The ComDry treats air from the void space by guiding it through the dehumidifier's desiccant drying wheel.

Air moisture is absorbed by the extreme hygroscopic surface of the desiccant rotor, and the dried air is then sent back into the void space. Moisture absorbed by the rotor is removed with heated regeneration air stream. It keeps the dewpoint in the void space lower than the lowest temperature on the cold surface. Lidl could be assured that no condensation occurred. At this low humidity level, mold and fungus won't appear and can't grow. This prevents hygiene issues and the building structure will be kept dry and unaffected by possible humidity-related damage. The dehumidifier is easy to access and Munters offers regular maintenance. Lidl is assured that the dehumidifier will always operate at its best with the lowest possible energy consumption.

Ice-free cold store

In addition to controlling the cold store climate, Munters also has solutions for inside the cold store. Common problems such as ice build on cooling coils, walls, floors, and ceiling can be easily avoided by attacking the cause of the problem – humidity. Conditions are significantly improved by reducing warmer ambient air humidity at the airlock/entrance conditions in the cold store itself.

Munters dehumidification solutions work in chill stores where product surface condensation is avoided and HACCP compliance is maintained. Lowering food processing area humidity reduces mold propagation and speeds up clean down.

Read more about Munters' award-winning IceDry™ solution: www.munters.com

