

Press release
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Combitherm helps engineering students to reduce energy consumption at Min Købmand

The grocery shop “Min Købmand” in the village of Laurbjerg, 40 kilometres from Aarhus saves 1,000 KWh a month after a group of young engineering students visited the shop and solved the problem of sky-high energy consumption from the shop’s freezer.

The energy crisis is taking its toll on retailers. Electricity has become very expensive, but you can’t just switch off the refrigerated counters and freezers. They must refrigerate around the clock to keep the goods fresh for the customers. This is also the case at Min Købmand in the small East Jutland town of Laurbjerg, where the electricity meter spins round fast and leaves its mark on the finances:

“If I hadn’t done something about the high electricity bills, I would have had to close down,” says shopkeeper Marianne Helboe.

Curious young people

Soaring energy prices have also been a topic of discussion in a study group of Bachelor of Engineering students from Aarhus University. They are first-year students who have just completed a project assignment in the field. One day, a group of young students came into the shop:

“They were really nice and very curious, and they wanted to look at the whole shop. It wasn’t long before they came to the freezer in the centre of the shop, which has lids on top, but it was freezing cold on all external surfaces,” Marianne says.

Advanced measurement

The young people examined the display freezer and measuring everything with thermal measuring equipment from the university. It turned out that although there was a lid on the freezer, the glass sides were icy cold on the outside. At the same time, it was very cold in the shop. One of the young people, Søren Andersen, had an idea - not just how they could provide a solution, but how they could solve the problem in practice. He knew about Combitherm, which produces sustainable insulating thermal mats and covers for several industries, and wondered if it could be a solution.

“They were measuring and drawing, and suddenly they were in the shop with some mats that they were going to hang on the freezer,” Marianne says with a smile. She was sceptical but gave them permission.

No regrets

Marianne has not regretted it. Engineering student Søren Andersen from the small group of students explains:

“The measurements show that Marianne saves about 1,000 kWh per month by hanging the mats on the outside of the freezer. We found that even though there was a lid on the freezer, a lot of energy was escaping out through the sides that were frozen solid. That is why we have wrapped it in specially sewn thermal mats from Combitherm. This actually means a measured and documented saving of 1,000 kWh per month, and depending on the price of electricity, it’s an amount that is tangible,” Søren says.

A great help

They were greatly assisted in their work by Combitherm, who found it a fun and specific assignment. Combitherm sewed the thermal mats for free to help the young students with their project.

“This meant that we could not only show the solution but also provide a specific remedy to the problem of a freezer that consumes too much electricity, and so be able to document the result,” says Søren Andersen.

The group was very enthusiastic about the assignment, and they were delighted with the collaboration with Combitherm:

“We are pleased that we were able to do something concrete. It’s one thing to measure and make theoretical calculations, which is what we must do in the engineering programme, but it’s great fun when we can actually do something specific to help,” Søren says on behalf of the group.

World-class temperature control

Combitherm is amongst the leading European manufacturers of flexible, tailor-made and energy-saving thermal solutions for a wide range of industries working with temperature-sensitive products and processes and where temperature fluctuations must be kept to a minimum.

Our products include pallet covers, partitions, cover mats, winter, concrete and asphalt mats as well as composite covers, all of which are important elements in the cooling chain in the transport and storage of e.g., foods and medicine or in relation to companies wishing to stabilise casting and curing processes within concrete and composite.

Fact box

Savings of several (hundred) thousands of kroner

The solution developed by the young students in collaboration with Combitherm is based on Polywool® insulation made from 78% recycled fibres (granules from soft drinks and water bottles). The density is 120 g/m², and the surface is made from cross-woven polypropylene. The freezer's glass has an external surface area of 6 m².

A single freezer saves approx. 1,000 KWh per month and based on an average price of DKK 1.57 per KWh, this quickly adds up to a few thousand kroner in monthly savings, equivalent to up to DKK 25,000/year, and more if the price of electricity is high. Therefore, the savings for a large supermarket with more and longer freezers will be correspondingly greater.

Further information

Questions can be directed to COO Torben Hallstrup at th@combitherm.dk or +45 2334 0180.

Photo

Marianne Helboe, a shopkeeper in a small grocery store reduced her electricity bill when a group of engineering students dropped by. With the help of Combitherm, she significantly reduced the display freezer's electricity consumption.

