When it gets icy, things only get really warmed up with *cool it* and ASO

Freezer rooms have become an integral part of our everyday lives. When it comes to foodstuffs, maintaining cold chains is the decisive factor for product quality. Amongst other things, cool it Isoliersysteme GmbH has set itself the task of manufacturing the best possible freezer room doors and the company places its trust here in sensors and door controls from ASO Safety Solutions. The cold environment left the engineers with only a little room for manoeuvre yet they fully exploited what was available.

Extreme conditions for SENTIR edge and DRICO

There are three principles that need to be observed under all circumstances when dealing with foodstuffs: the cold chain, hygiene and once again the cold chain. For freezer room doors from *cool it* to support these principles, it requires the orchestration of a delicate symphony of mechanics and electronics.

In order to protect the users of doors and gates against mechanical impact, ASO Safety Solutions produce safety contact edges made out of elastomers, or in other words: plastic.

If contact is made with an obstacle, the contact edge is triggered and stops the dangerous movement of the door or gate in fractions of a second. Everybody is familiar with the influence that temperature can have on plastic in everyday life: it becomes softer in warm temperatures and harder when the temperature drops. Extremely low temperature ranges naturally also have an influence on the stiffness of the safety contact edges used by *cool it*. Quote from *cool it*: "In those freezer rooms where *cool it* doors are used, the temperature can easily drop to -30 °C. This can be described with no hesitation as extreme environmental conditions."

In order to safeguard the crushing and shearing points for *cool it* doors, ASO had to reduce the hardness of the self-extruded SENTIR edge 35.85 contact edges to generate sufficient switching action on the profile. Consequently, ASO were able to develop a contact edge that was significantly softer across its entire structure than would have been necessary in more moderate temperature ranges. The power measurements on the doors were more than positive as a result. They fell significantly below the stipulated maximum value of 400 newtons (the maximum force recommended by the German statutory accident insurance system) even at -25°C.

The efficient path to products at ASO

The realisation of technical requirements is only one of the challenges within this type of project. Another is the organisation of the quantitative workflows and guaranteeing quality standards. In order to not only effectively but also efficiently manage the project with *cool it*, ASO put its entire processes to the test. It was possible to make concrete deductions for the production of the DRICO door controls as a result.

As a consequence, ASO set up the Electronic Test Field Department where the DRICO door controls were assessed using automatic diagnostic programmes and thoroughly put through their paces on special test stands.

The cooperation with *cool it* demonstrates very clearly what a difference the ASO concept of "Partner in Performance" makes: A perfect solution can only come to light when the problem has been fully understood. Therefore, we are delighted to also forge new paths together with our customer and jointly develop new solutions.

The devil is in the detail

Yet it is not only plastic that finds it difficult in cold environments, these types of low temperatures also pose a challenge for electronic components. Therefore, it was not only necessary to adapt the contact edges to the extreme conditions in the freezer room but also the control systems for the doors. Even the smallest components in the DRICO door controls were tested for their material properties. For example, the crystals in the LCD display could freeze, which is why a 7-segment display was fitted instead.

DRICO door controls in a frosty environment

Another difficulty that can arise in combination with the cold is the potential for the door to freeze shut. Therefore, the drive system must generate sufficient force when operated to also move a door in a frozen state in an emergency. "It was important for us to develop a higher torque at a lower frequency. After considering the issue together, we jointly decided with *cool it* to have a direct drive", is how ASO Developer Reinhard Schade describes the approach used to find the right solution.

The use of DRICO on-site

In order to minimise the work for the fitters and service personnel at *cool it*, a particular focus was placed on ensuring easy fitting and repair on-site. It was possible to keep the fitting work to a minimum by preassembling the DRICO door controls and the drive. A mounting plate, which is fitted between the control and the drive, also offers the additional possibility of separate dismantling. This simplifies the service work significantly.

Company:
cool it Isoliersysteme GmbH

Location:
Melle

Industry:
Door and gate systems

Products and services:
Hinged doors, swing doors, sliding doors, fire doors, vertical lift gates, rapid roll gates and accessories

Number of employees:
Approx. 200 employees

Web address:
www.coolit.de

Task and objective:
Fitting *cool it* doors with cold-resistant safety contact edges and door controls.

Solution:
SENTIR edge contact edges and DRICO door controls

Contact at ASO:
Markus Horstkemper