

Lünewell.  
Self-cooling batteries:  
more power for large electric forklift trucks.

In heavy-duty applications, such as in the paper industry, the conventional lead acid batteries of large electric forklift trucks often reach their temperature limits. With self-cooling PowerPlusLife batteries, the renowned forklift truck manufacturer and intralogistics specialist STILL has developed a cost-effective solution. Lünewell, the corrugated board manufacturer, is already reaping the benefits. Two STILL RX 60 electric forklift trucks (8-tonne load capacity) were fitted with the patented battery system to meet the demands of handling up to 3.8-tonne paper rolls.



**Sector:** Paper industry

**Company:** Lünewell is a subsidiary of the family company Cartoflex

**Challenges:** Production of 150 million square metres of corrugated board per year. Daily delivery of 72 paper rolls weighing up to 3.8 tonnes.

**Solution:** Replace diesel forklift trucks with efficient, emission-free electric forklift trucks with self-cooling PowerPlusLife batteries and special accessories for handling paper rolls.

**STILL products:** RX 60-80 electric forklift truck stacks up to 8 tonnes more than 9 metres high.

In its new production hall in Lüneberg, its subsidiary company Lünewell now produces more than 150 million square metres of its own corrugated board per year using cutting-edge technology.

## Lünewell: “The art of corrugation”

The medium-sized family business Cartoflex has been converting corrugated board into intelligent packaging systems for 35 years. In its new production hall in Lüneberg, its subsidiary company Lünewell now produces more than 150 million square metres of its own corrugated board per year using cutting-edge technology. It is now applying its specialist knowledge of the packaging industry’s specific requirements for the corrugated profile, acquired over many years, to its own corrugated board production.

## Handling heavy paper rolls with electric forklift trucks

Thirty STILL electric industrial trucks are used to transport the delicate products. The full service means they are always available and the costs easy to calculate. Lorries deliver some 72 paper rolls to the production hall every day. The magnificent rolls weigh up to 3.8 tonnes and stand 2.5 metres high. Two new RX 60-80 electric forklift trucks were purchased from STILL specifically to cope with the challenge of handling the heavy rolls; they were each fitted with one of STILL’s air-cooled Power-PlusLife batteries for high handling capacity. The powerful RX 60 forklift trucks are able to unload the lorries and transport the products to the warehouse, where up to three paper rolls are stacked up to a total height of 7.5 metres to save space. They also feed the paper rolls into the production machine.

## Electric forklift trucks versus forklift trucks with combustion engines

Until now, diesel trucks, in particular, have offered high load capacities. The engines often had to be fitted with additional components such as diesel catalytic converters, particle filters and SCR (selective catalytic reduction) catalysts to reduce nitrogen oxide emissions (NOX) for indoor use. Andreas Isermann, Head of Maintenance, confirms this, adding: “In addition to the strict requirements and contaminated air, which would have soiled the paper rolls, we would have had to install a tank system.







The 8-tonne RX 60-80 electric forklift trucks with STILL's cost-effective PowerPlusLife battery have a comparable load capacity, until now reserved only for powerful forklift trucks with combustion engines!



Diesel trucks are also louder than equivalent electric ones and increase the room temperature, which is already high from the corrugated card production.”

Electromobility is gaining more and more momentum – electrical energy storage systems are becoming increasingly efficient, and volume effects are sure to bring about a reduction in prices in the future. The costs of servicing and maintaining electric forklift trucks are considerably lower than for equivalent diesel trucks. With the increasing efficiency of the energy storage systems, more powerful components are also being installed. Consequently, electric vehicles, which are more efficient than ones with fossil fuel drives, will increasingly encroach on the domains of vehicles with internal combustion engines.

### **PowerPlusLife battery technology**

In heavy-duty electric forklift truck applications, that is, ones which consume a lot of power such as the handling of heavy paper rolls, the core temperature of lead acid batteries can get too high. Until now, the only solution was to install additional or particularly expensive specialist batteries with a high energy density.

In contrast, STILL's PowerPlusLife battery draws on tried and tested lead acid technology and offers a cost-effective solution thanks to its patented self-cooling system. In the new STILL PowerPlusLife battery, a number of temperature-controlled fans cool the battery's core effectively in any situation. The air cooling system lowers the temperature of the battery in the forklift truck, at the charger or at the point of





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supply. That eliminates the need for cooling cycles after driving and loading. Andreas Isermann: "STILL's battery technology came just at the right time. We now have enough capacity for a full shift. After that, the batteries can be recharged quickly. Additional replacement batteries are no longer necessary."

## **The electric forklift truck's power enters the domain of the IC truck**

The reduction of the core temperature by up to 20°C significantly conserves STILL's PowerPlusLife battery. That drastically increases capacity. The acceleration and lifting speed, for example, can be increased by up to 25 percent. If necessary, the maximum driving speed can be increased by 18 percent from 17 to 20 km/h. STILL's 8-tonne electric forklift trucks in the RX 60-80 series therefore have a comparable load capacity, until now reserved only for powerful forklift trucks with combustion engines!

Andreas Isermann emphasises: "The reduction of the forklift truck battery's core temperature is the crucial factor. In STILL's PowerPlusLife battery, cooling prevents a loss of capacity. Lowering the temperatures also reduces the physical load. The batteries therefore do not need to be changed as often. Together with the fast lateral battery change and the manoeuvrability of the RX 60-80, the bottom line is an increase in load capacity."





The air cooling system of the STILL Power-PlusLife battery reduces the core temperature by up to 20°C.

The elimination of long cooling cycles means that only two replacement batteries are needed for both RX 60-80s as opposed to five.

Together with the fast lateral battery change and the manoeuvrability of the RX 60-80, the bottom line is an increase in load capacity.

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## Longer service life, fewer replacement batteries

The reduction in the operating temperature of the STILL PowerPlusLife battery increases service life by up to two years, even in the most heavy-duty applications.

“The elimination of long cooling cycles means we only need two replacement batteries for both RX 60-80 trucks as opposed to five. So there is much less strain on both our batteries and budget,” sums up the satisfied head of maintenance.



The highly manoeuvrable RX 60-80 supplies the production machine with paper rolls.