

# Lithium-ion electrode manufacturing

Turnkey solutions offered by Dürr and Techno Smart

## MARKET-LEADING TECHNOLOGIES

Dürr provides complete packages to electric car battery manufacturers who can rely on its state-of-the-art technology for coating and drying electrodes and its proven systems for solvent recovery and refining systems.

Due to a cooperation with Techno Smart, a leading Japanese manufacturer of coating systems, Dürr is expanding its offerings to include tandem coaters to battery cell manufacturers. This further increases the effective support to the development of battery manufacturing for e-mobility as an experienced partner of the automotive and battery energy storage industries.

## KEY FACTS



[Wide range of coating technologies for all applications](#)

[Tandem and two-sided simultaneous coating lines including wide webs](#)

[Air flotation dryer and roll-support dryer](#)

[Solvent recovery & refining systems](#)

[Strong partnership between two established technology leaders](#)

# All relevant coating technologies

## Covered by Dürr and Techno Smart

### THE BEST OF BOTH WORLDS

Dürr in cooperation with Techno Smart offers integrated solutions as a turnkey supplier for electrode manufacturing. You can benefit from a single source offering coating, drying, solvent recovery and refining.

Our in-house research and development center and the close technology transfer between the strong cooperation partners further enhance the efficiency and coating quality in battery production.

### COATING AND DRYING TECHNOLOGIES

The tandem coating (see Fig. 1) is based on mature technology with only one straightforward coating process taking place. Tandem coating is less sensitive to foil quality and thus optimized for large foil widths. The process is characterized by a slot-die coating on a backing roll to coat one side at a time. A roll support dryer is ideal for tandem lines, i.e. to dry coating on one side.

The simultaneous two-sided coating (see Fig. 2) is characterized by a straight-path product flow and a single coating station. This unique process provides benefits such as a smaller overall manufacturing footprint and no edge curl after drying. It consists of a slot-die coating on a backing roll immediately followed by a tensioned-web slot-die coating to coat both sides

of the foil in one pass. An air flotation dryer enables simultaneous two-sided coating as the foil is running through a non-contact drying process.

Dürr realizes the specifications shown opposite with its wide range of coating technologies. Together with you, we will identify the solution optimized to your production requirements – taking into account economic and ecological aspects.

### TECHNICAL DATA

#### Coating specifications

|                       |                             |
|-----------------------|-----------------------------|
| Coat weight / side    | 70-300 g/m <sup>2</sup> dry |
| Coat weight precision | < +/-1%                     |
| Sharp edges           | < 3 mm                      |
| Dimensions & register | +/-0.5 mm                   |

### SOLVENT RECOVERY SYSTEM

Dürr has developed a system for the recovery of solvents to fit both tandem and two-sided simultaneous coating. The proprietary systems ensure high-efficiency removal, recovery, and purification of solvents from coating line exhaust air streams in the battery electrode manufacturing process.

### COATING LINE LAYOUTS SUPPLIED BY DÜRR

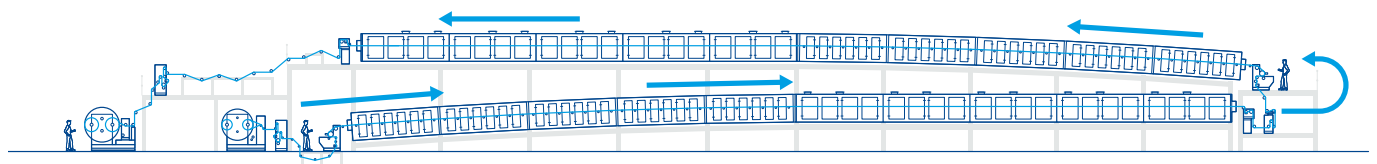


Fig. 1 – Tandem coater with combined roll support and flotation dryer



Fig. 2 – Two-sided simultaneous coater with air flotation dryer