

## Safety Alert 3: Electric shock accident

### Accident description

- The injured employee was assisting an electrician in the replacement of batteries (4 pcs 12V/55Ah) at a wrapping machine.
- The injured employee was supporting a battery to be removed from the rack, with his left hand under the base of the battery. With his right hand he was holding an Allen key on the screw to be opened above battery no. 2.
- The electrician was opening the nut in the last bracket iron of battery no. 2 with a spanner. The other end of the spanner touched the plus pole of the battery which was exposed because its rubber cover had become displaced.
- When the spanner touched the plus pole, it resulted in a short-circuit and arcing, causing the fingers of the employee holding the Allen key to cramp and become locked in a bent position. He was taken to the occupational physician for first aid and further to hospital for treatment.
- Molten metal from the spanner splattered onto the shoe of another employee who had been assisting the electrician, causing a burn injury. He received first aid on the site for the injury, and was then sent to the occupational health centre. This injury did not cause any absence from work.
- The causes of the accident include e.g. the lack of a risk assessment and work planning, the zero wire had not be disconnected from the frame, the nut was opened with an uninsulated tool although work involved a risk of the spanner touching live parts, and structural weakness of the rubber cover (is displaced at a light touch).

### Corrective actions

- The accident will be reviewed in small groups in all the units where a similar accident could occur.
- A detailed work instruction will be drawn up for the replacement of batteries.
- The use of appropriate tools is taken into account in the work instruction.
- Preparations will be made from now on for the replacement of batteries so as to ensure that it can be carried out by one person (more space, better visibility). An adjustable work platform will be introduced on which the batteries can be supported during replacement.



The spanner was caught between the plus pole and the nut causing a short-circuit and arcing.



The connector of the plus pole on the frame under the fastening screw of the last (no. 4) battery melted as a result of the short-circuit.