

Bergmann RP-EV

Essential Battery Information



How long does the battery take to charge?

A standard charge takes 10 hours to achieve 100% capacity. A fast charge will charge the battery to 80% in 45 minutes. There is no 'memory effect': this is a problem of nickel cadmium batteries which have reduced capacity if only charged up partially. It does not apply to the battery in the Bergmann RP-EV which is made from lithium iron phosphate.

How long does the battery last on a full charge?

Evidence from customers shows that on a full charge, the Bergmann RP-EV will work for between six and nine hours of continuous compacting and driving. A typical HWRC site uses the Bergmann Mobile Roll Packer for between one and two hours per day, so a full charge should last at least three days.

What is the lifespan of the battery?

The battery is guaranteed for 4000 complete charging cycles. 200 complete charges per year means the battery is guaranteed for 20 years, so the battery should not need to be changed. If a full charge is not required, the number of possible charges increases.

Doesn't the battery deteriorate each time it is charged and discharged?

Not with the Bergmann Smart Balancing System (SBS). In multi-cell batteries, if one cell runs out of charge, the whole battery capacity is reduced. Equally, if one cell reaches maximum safe charging voltage, charging must stop, even if some cells are not fully charged, again reducing capacity. The Bergmann SBS is both active and passive, distributing charge continuously from the most charged to the least charged during charging and discharging, maximizing the capacity and lifespan of the battery.

What type of socket?

A standard 230V socket is all that is needed.

Is it lithium-ion or lithium iron?

The battery in the Bergmann RP-EV is made from lithium iron phosphate (LiFePO₄, or also referred to as LFP) which has a higher safety rating than lithium-ion. Lithium iron phosphate has excellent thermal and chemical stability meaning it stays cool in higher temperatures. However, lithium-ion batteries can become unstable heating up faster during charging and can experience thermal runaway. (See over)

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Also, lithium-ion has to be disposed of carefully as the lithium cobalt dioxide composition is considered hazardous. On the other hand, lithium iron phosphate is nontoxic and can be disposed of more easily by manufacturers.

What about battery fires?

Much is talked about battery fires but these are nearly always involve NMC (nickel, cobalt, manganese) batteries and refer to the cathode material used. The Bergmann RP-EV uses a LFP (lithium iron phosphate) battery which is far more stable being able to operate between -30°C - $+45^{\circ}\text{C}$. In addition, the Smart Balancing System distributes charge from the most charged to the least charged during charging and discharging minimizing any risk of battery overheating.

What about charging batteries in freezing conditions?

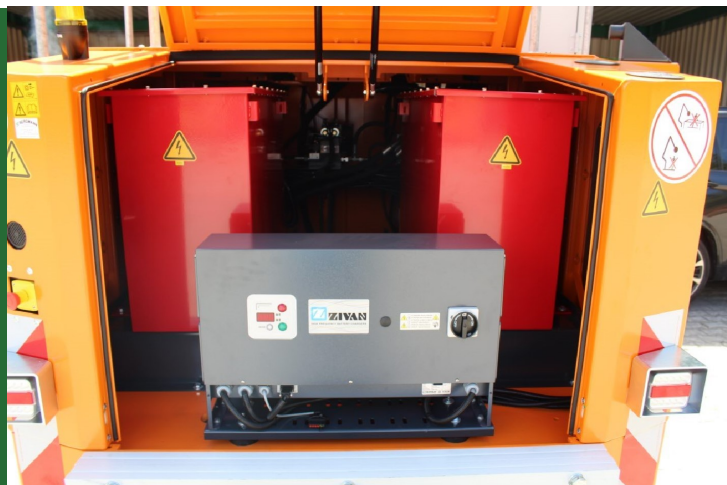
No lithium batteries can be charged in temperatures less than 0°C but the internal heating system in the Bergmann RP-EV keeps the temperature above freezing ensuring that there is no loss of capacity during charging or discharging, even on cold days.

Battery Specification

Class	LiFePO4 (lithium iron phosphate)
Voltage	80V
Capacity	26.2 kWh / 315Ah
Protection class	IP54
Ambient operating temperature	-30°C - $+45^{\circ}\text{C}$

The battery compartment in the new Bergmann RP-EV, showing the 26.2kW battery modules and fast-charger.

The battery has a lifespan of 4000 complete charging cycles.



For more information

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