



Battery Pass

CONTENT GUIDANCE

QUESTION 8

Which performance and durability data attributes are in scope of the battery passport?



The battery passport requires information on around 40 different performance and durability data attributes. These include information on battery energy/capacity, power, resistance, and the number of charge and discharge cycles. It also requires reporting on temperature conditions and negative events the battery encounters during its use.

The battery passport separates data into static (pre-use) and dynamic (in-use) categories.

- Static data points provide information about the battery model and are mostly publicly available.
- Dynamic data points pertain to individual batteries and are accessible only to persons with a legitimate interest.

The EU Battery Regulation also distinguishes some of the requirements by the different battery categories such as electric vehicles, stationary battery storage systems and LMT batteries.

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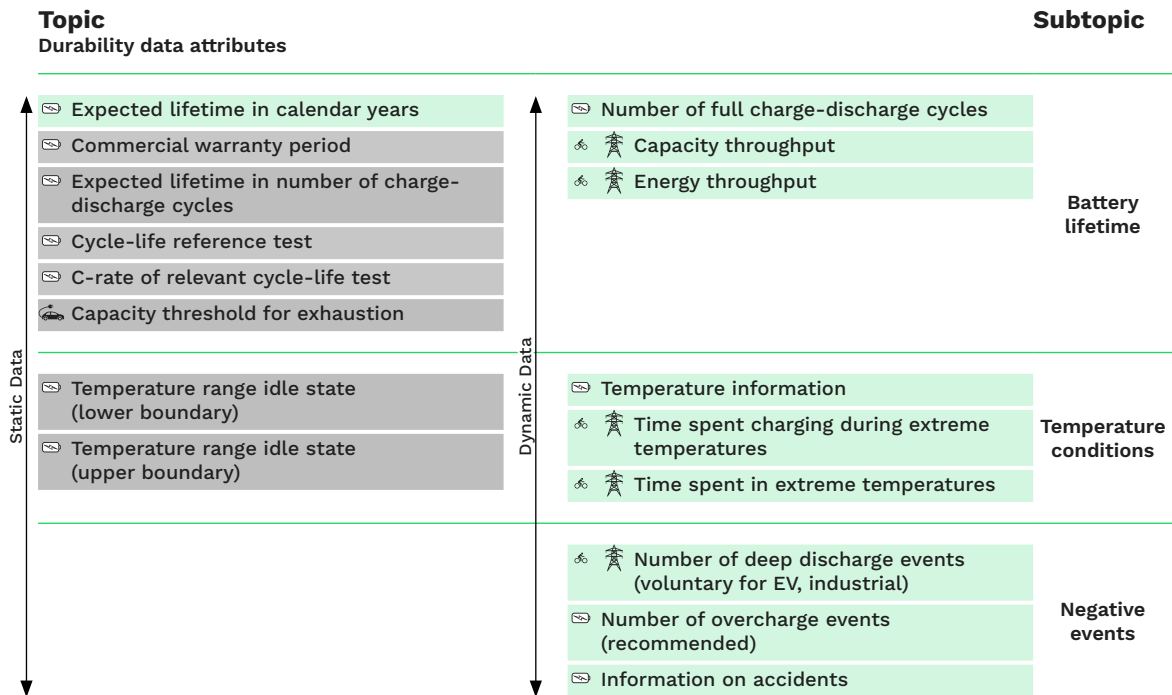
Please note that the list of data attributes below has been updated to reflect the information as included in the DIN DKE Spec 99100 (to be published in late 2024), and therefore differs from Figure 13 shown in the Battery Passport Content Guidance (p.61).



Around 40 performance and durability data attributes are required for the Battery Passport, while detailed descriptions are falling short in the Battery Regulation

Access groups: <ul style="list-style-type: none"> Public Interested persons 	Battery categories: <ul style="list-style-type: none"> All batteries EV batteries (if BMS is used) LMT batteries (if BMS is used) Industrial batteries incl. stationary ESS > 2 kWh Stationary BEES > 2 kWh
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Topic	Subtopic
Performance data attributes	
<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">Static Data</div> <div style="border: 1px solid #ccc; padding: 5px; width: 100%;"> <ul style="list-style-type: none"> Rated capacity Capacity fade Certified usable battery energy (recommended) Minimal, nominal and maximum voltage, with temperature ranges when relevant </div> </div>	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">Dynamic Data</div> <div style="border: 1px solid #ccc; padding: 5px; width: 100%;"> <ul style="list-style-type: none"> Remaining capacity Certified usable battery energy (recommended) State of certified energy (SOCE) State of charge (SoC) </div> <div style="margin-left: 10px; text-align: center;"> Capacity, energy and voltage </div> </div>
<div style="border: 1px solid #ccc; padding: 5px;"> <ul style="list-style-type: none"> Original power capability Power fade Maximum permitted battery power Ratio between nominal battery power and battery energy (recommended) </div>	<div style="border: 1px solid #ccc; padding: 5px;"> <ul style="list-style-type: none"> Where possible, remaining power capability </div> <div style="margin-left: 10px; text-align: center;"> Power Capability </div>
<div style="border: 1px solid #ccc; padding: 5px;"> <ul style="list-style-type: none"> Initial round trip energy efficiency Where applicable, round trip energy efficiency fade Round trip energy efficiency at 50% of cycle life Initial self-discharge rate </div>	<div style="border: 1px solid #ccc; padding: 5px;"> <ul style="list-style-type: none"> Where possible, remaining round trip energy efficiency Current self-discharge rate (recommended) Evolution of self-discharge rate (recommended) </div> <div style="margin-left: 10px; text-align: center;"> Energy round trip efficiency Self-discharge </div>
<div style="border: 1px solid #ccc; padding: 5px;"> <ul style="list-style-type: none"> Internal battery resistance (cell & pack) Internal resistance increase (pack; cell/module recommended) </div>	<div style="margin-left: 10px; text-align: center;"> Internal Resistance </div>



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