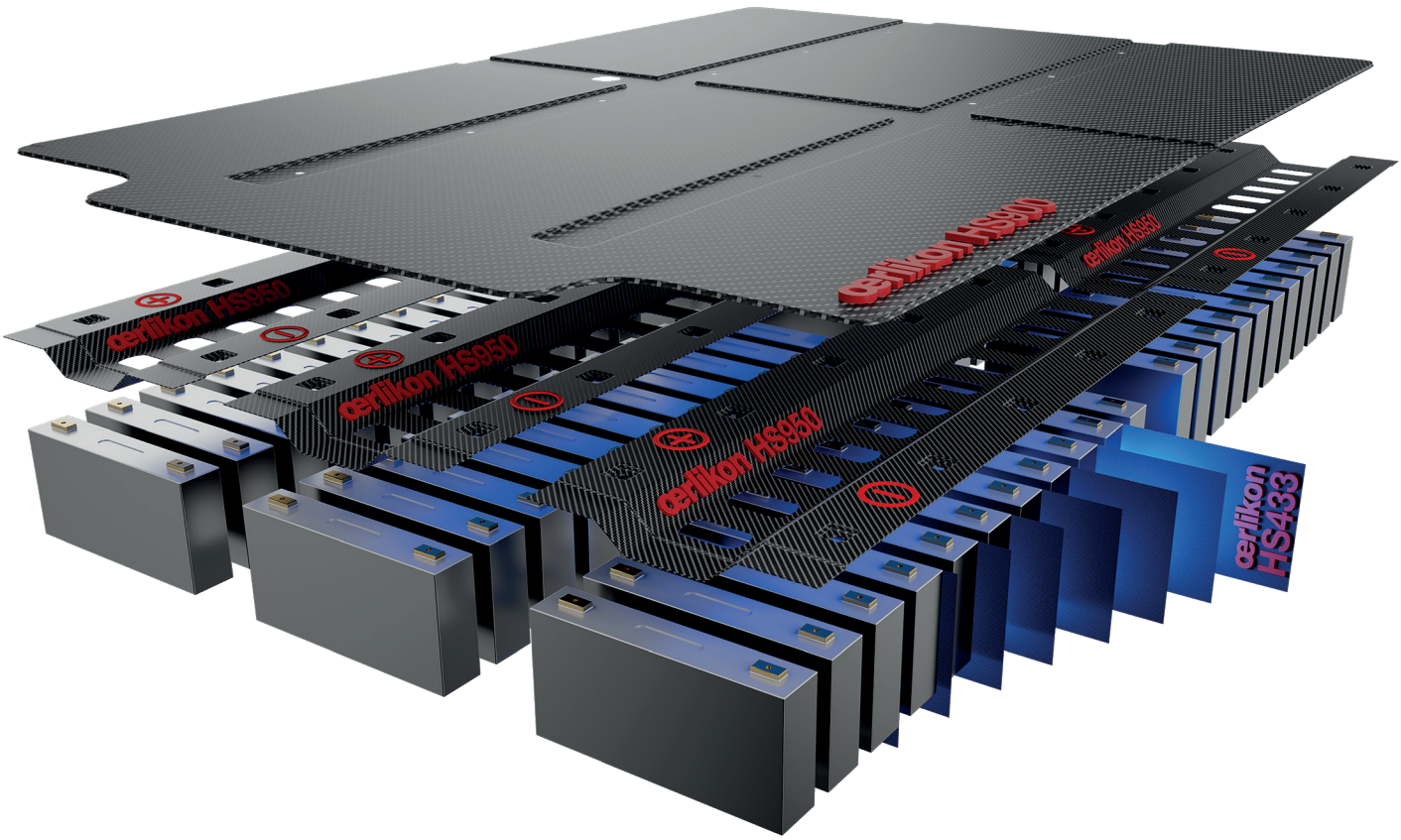
oerlikon

Heat Shield

Safety in Battery Electric Vehicles by Ensuring Zero Thermal Propagation and Enabling Limp Home Driving Mode



HS800/HS900

High Performance Heat Shield with Superior Thermal and Electrical Insulation

EV

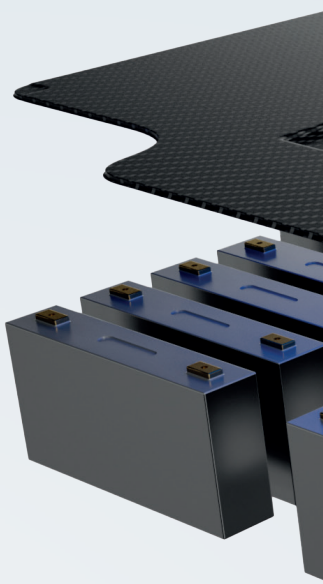
Custom Engineered, High Temperature Resistant Heat Shields

HS800 and **HS900** series of heat shields provide high-performance thermal insulation and high velocity particle impact protection. Lightweight and versatile providing robust temperature resistance up to 1400 °C, coupled with superior electrical insulation to withstand up to 18 kV.

Designed for flexibility, the heat shields can be molded into complex 3D shapes.

HS800/HS900 Heat Shield Benefits

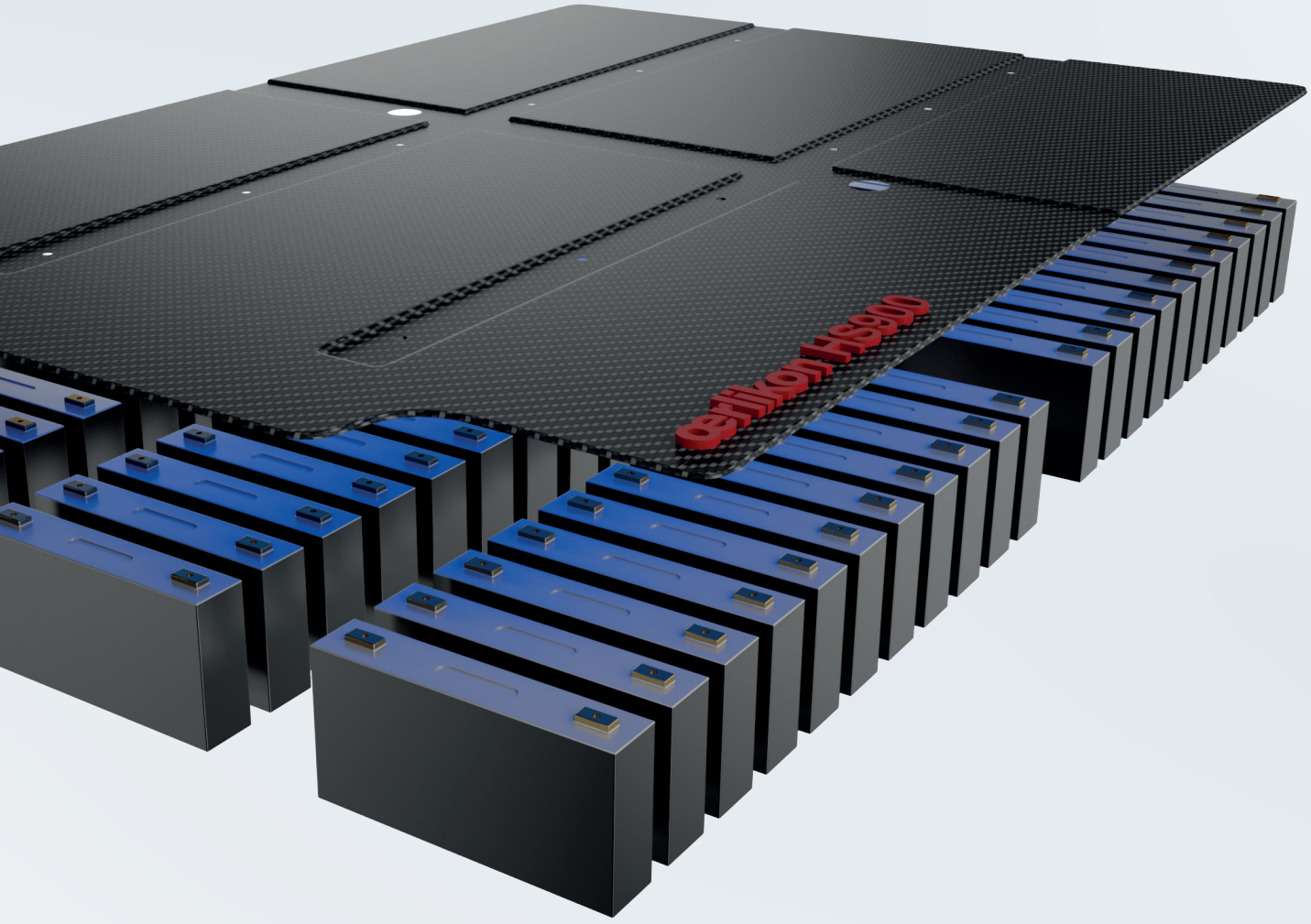
- Superior temperature resistance up to 1400 °C
- Exceptional electrical insulation up to 18 kV
- High velocity particle impact protection
- 3D component design
- Ultra-thin & ultra-light material
- Meets highest global battery safety requirements and standards
- Vibrational and fatigue resistance
- Mitigate thermal propagation
- ESG compliant (mica-free, non-petroleum-based material)
- UL94-V0 classification



Reliable Protection for Passengers in Case of a Thermal Runaway Event

Engineered to safeguard occupants from thermal runaway events in lithium-ion batteries, our heat shield solutions adhere to stringent regulatory safety standards, such as GB 38031-2020, and are validated in our state-of-the-art laboratory.

Our heat shields are customizable to meet specific requirements, including features such as various fixing and poka-yoke options. While maintaining a compact design for easy installation our components are vibration-resistant in addition ensuring durability and reliability.



Material Specifications at a Glance

		HS812	HS912	HS915	HS918	Test Method
Thermal Properties						
Thermal Performance @ >30 min [°C]		1200	1400	1400	1400	ST-I-DE-014 (4.2.1)
Thermal Insulation Performance Reverse Side Temperature @ 1200 °C [°C]		410	390	370	355	ST-I-DE-014 (4.2.2)
Hot Gas Particle Impact Resistance [sec]		20	35	55	80	ST-I-DE-014 (4.2.2)
Thermal Conductivity [W/(m.k)]	25 °C 300 °C	0.21 0.16	0.23 0.17	0.27 0.21	0.33 0.24	LFA
UL94 Classification		V0	V0	V0	V0	UL94
Electrical Properties						
Dielectric Strength [kV]		15	12	15	18	ST-I-DE-015
Physical Properties						
Density [g/cm^3]		1.31	1.33	1.37	1.39	ST-I-DE-016
Thickness [mm]		1.0	1.2	1.5	1.8	DIN ISO 9073-2
Mechanical Properties						
Tensile Strength [MPa]		25	30	35	40	DIN EN ISO 527-4
Compressive Rate [N/mm^2]	<5 MPa 5 to 20 MPa	200 740	260 850	320 960	380 1070	DIN EN ISO 604

For further technical and unique requirements please contact us

Oerlikon superior heat resistant materials enable to meet all safety requirements within the UN GTR No. 20 legislation.

All international and national regulations are based upon strict safety requirements with a minimum of five minutes to allow the occupants safe evacuation from the vehicle before fire outspread due to a thermal event.

Regulations
China - GB 38031
Europe - ECE R100
India - AIS-038
Japan - Harmonized with UN R100
Republic of Korea - KMVSS 18-3
USA - UL2580

BRO-0043.4

For more information, contact us at:
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