

		6.3	Requirements for the emission of hazardous gases and other hazardous substances			x	Safety / Abuse-Environmental						
		6.4	Heat generation from the RESS			x	Safety / Abuse-Environmental						
		7	RESS over-current interruption			x	Safety / Abuse-Electrical						
		8.1	Protection of occupants			x	Safety / Abuse-Mechanical						
		8.2	Protection of a third party			x	Safety / Abuse-Mechanical						
		8.3	Protection against a short-circuit			x	Safety / Abuse-Electrical						
SAE J2929:2013	(H)EV		Electric and Hybrid Vehicle Propulsion Battery System Safety Standard - Lithium-based Rechargeable Cells.										x
		4.2.2.1	Vibration Alternative 1. Complete battery system vibration test			x	Safety / Abuse-Mechanical						
		4.2.2.2	Vibration Alternative 2. Battery Subsystem Vibration test.			x	Safety / Abuse-Mechanical						
		4.2.3	Thermal shock				Safety / Abuse-Environmental						
		4.2.4	Humidity/Moisture Exposure			x	Safety / Abuse-Environmental						
		4.2.5	Electromagnetic Susceptibility			x	Safety / Abuse-Electrical						
		4.3	Drop Test				Safety / Abuse-Mechanical						
		4.4	Immersion Test			x	Safety / Abuse-Environmental						
		4.5	Mechanical Shock			x	Safety / Abuse-Mechanical						
		4.6	Battery Enclosure Integrity			x	Safety / Abuse-Mechanical						
		4.7	Exposure to Simulated Vehicle fire			x	Safety / Abuse-Environmental						
		4.8	Electrical Short Circuit			x	Safety / Abuse-Electrical						
		4.9	Single Point Overcharge Protection System Failure			x	Safety / Abuse-Electrical						
		4.10	Single Point Over Discharge Protection System Failure			x	Safety / Abuse-Electrical						
		4.11	Single Point Thermal Control System Failure			x	Safety / Abuse-Thermal						
		4.13	Protection against High Voltage Exposure			x	Safety / Abuse-Electrical						
SAE J2464:2009	(H)EV		Electric and Hybrid Electric Vehicle Rechargeable Energy Storage System (RESS) Safety and Abuse Testing.										x
		4.3.1	Shock tests	x	x	x	Safety / Abuse-Mechanical						
		4.3.2	Drop test			x	Safety / Abuse-Mechanical						
		4.3.3	Penetration test	x	x	x	Safety / Abuse-Mechanical						
		4.3.4	Roll-over test	x	x	x	Safety / Abuse-Mechanical						
		4.3.5	Immersion test	x	x	x	Safety / Abuse-Environmental						
		4.3.6	Crush test	x	x	x	Safety / Abuse-Mechanical						
		4.4.1	High temperature hazard test			x	Safety / Abuse-Thermal						
		4.4.2	Thermal stability test	x		x	Safety / Abuse-Thermal						
		4.4.3	Cycling without thermal management	x	x	x	Safety / Abuse-Thermal						
		4.4.4	Thermal shock cycling	x	x	x	Safety / Abuse-Thermal						
		4.4.5	Passive propagation resistance test	x	x	x	Safety / Abuse-Thermal						
		4.5.1	Short circuit test	x	x	x	Safety / Abuse-Electrical						
		4.5.2	Overcharge test	x	x	x	Safety / Abuse-Electrical						
		4.5.3	Overdischarge (Forced Discharge) test	x	x	x	Safety / Abuse-Electrical						
		4.5.4	Separator shutdown integrity test	x			Safety / Abuse-Electrical						
SAE J1798 WIP	(H)EV		Recommended Practice for Performance Rating of Electric Vehicle Battery Modules										
			<i>under development</i>										
UL 2580:2013	(H)EV		Outline of investigation for batteries for use in electric vehicles.										x
		17	Manufacturing and Production Line Testing and Production Quality.			x							
		25	Overcharge Test			x	Safety / Abuse-Electrical						
		26	Short Circuit Test			x	Safety / Abuse-Electrical						
		27	Overdischarge Protection Test			x	Safety / Abuse-Electrical						
		28	Temperature Test			x	Safety / Abuse-Thermal						
		29	Imbalanced Charging Test			x	Safety / Abuse-Electrical						
		30	Dielectric Voltage Withstand Test			x	Safety / Abuse-Electrical						
		31	Isolation Resistance Test			x	Safety / Abuse-Electrical						
		32	Continuity Test			x	Safety / Abuse-Electrical						
		33	Failure of Cooling/Thermal Stability System Test			x	Safety / Abuse-Thermal						
		34	Rotation Test			x	Safety / Abuse-Mechanical						
		35	Vibration Endurance Test			x	Safety / Abuse-Mechanical						
		36	Shock Test			x	Safety / Abuse-Mechanical						
		37	Drop Test			x	Safety / Abuse-Mechanical						
		38	Crush Test			x	Safety / Abuse-Mechanical						
		39	Thermal Cycling			x	Safety / Abuse-Thermal						
		40	Salt Spray Test			x	Safety / Abuse-Environmental						
		41	Immersion Test			x	Safety / Abuse-Environmental						
		42	External Fire Exposure Test			x	Safety / Abuse-Thermal						
		43	Internal Fire Exposure Test			x	Safety / Abuse-Thermal						
QC/T 743-2006	(H)EV		Automotive Industry Standard of the People's Republic of China - Lithium-ion Batteries for Electric Vehicles.						x	x			x
		6.2.5	Discharge Capacity at 20°C	x			Performance-Electrical						
		6.2.6	Discharge Capacity at -20°C	x			Performance-Electrical						
		6.2.7	Discharge Capacity at 55°C	x			Performance-Electrical						
		6.2.8.1	Rate Discharge Capacity at 20°C, High energy density battery				Performance-Electrical						
		6.2.8.2	Rate Discharge Capacity at 20°C, High power density battery	x			Performance-Electrical						
		6.2.9.1	Charge holding and recovery characteristics at normal temperature	x			Ageing-Electrical						
		6.2.9.2	Charge holding and recovery characteristics at high temperature	x			Ageing-Electrical						
		6.2.10	Storage	x			Ageing-Electrical						
		6.2.11	Cycle Life	x			Ageing-Electrical						
		6.2.12.1	Over-discharge	x			Safety / Abuse-Electrical						
		6.2.12.2	Overcharge	x			Safety / Abuse-Electrical						
		6.2.12.3	Short Circuit	x			Safety / Abuse-Electrical						
		6.2.12.4	Fall	x			Safety / Abuse-Mechanical						
		6.2.12.5	Heat	x			Safety / Abuse-Mechanical						
		6.2.12.6	Crush	x			Safety / Abuse-Mechanical						
		6.2.12.7	Prick	x			Safety / Abuse-Mechanical						
		6.3.5	Discharge Performance at 20°C	x			Performance-Electrical						
		6.3.6	Simplified loaded mode	x			Performance-Electrical						
		6.3.7	Resistance to vibration	x			Safety / Abuse-Mechanical						
		6.3.8.1	Over-discharge	x			Safety / Abuse-Electrical						
		6.3.8.2	Over-charge	x			Safety / Abuse-Electrical						
		6.3.8.3	Short circuit	x			Safety / Abuse-Electrical						
		6.3.8.4	Heat	x			Safety / Abuse-Thermal						
		6.3.8.5	Crush	x			Safety / Abuse-Mechanical						
		6.3.8.6	Prick	x			Safety / Abuse-Mechanical						
DOE-INL/EXT-15-34184	(H)EV		U.S. DOE Battery Test Manual for Electric Vehicles						x	x			x
		3.2	Static Capacity Test	x	x	x	Performance-Electrical						
		3.3	High Rate Charge Test	x	x	x	Performance-Electrical						
		3.4	Hybrid Pulse Power Characterization Test	x	x	x	Performance-Electrical						
		3.5	Peak Power Test	x	x	x	Performance-Electrical						
		3.6	Self Discharge Test	x	x	x	Ageing-Electrical						

		3.7.1	Survival Temperature Test	x	x	x	Safety / Abuse-Thermal					
		3.9	Cycle Life Dynamic Stress Test	x	x	x	Ageing-Electrical					
		3.10	Calendar Life Test	x	x	x	Ageing-Electrical					
		3.11	Reference Performance Test	x	x	x	Performance-Electrical					
SAND 2005-3123	(H)EV		FreedomCAR - Electrical Energy Storage System Abuse Test Manual for Electric and Hybrid Electric Vehicle Applications.								x	x
		3.1	Controlled Crush		x	x	Safety / Abuse-Mechanical					
		3.2	Penetration	x	x	x	Safety / Abuse-Mechanical					
		3.3	Drop			x	Safety / Abuse-Mechanical					
		3.4	Immersion	x	x	x	Safety / Abuse-Mechanical					
		3.5	Roll-over Simulation		x	x	Safety / Abuse-Mechanical					
		3.6	Mechanical shock		x	x	Safety / Abuse-Mechanical					
		4.1	Thermal Stability	x	x	x	Safety / Abuse-Thermal					
		4.2	Simulated Fuel Fire		x	x	Safety / Abuse-Thermal					
		4.3	Elevated Temperature Storage	x	x	x	Safety / Abuse-Thermal					
		4.4	Rapid Charge/Discharge		x	x	Safety / Abuse-Thermal					
		4.5	Thermal shock cycling	x	x	x	Safety / Abuse-Thermal					
		5.1	Overcharge / Overvoltage		x	x	Safety / Abuse-Electrical					
		5.2	Short Circuit	x	x	x	Safety / Abuse-Electrical					
		5.3	Overdischarge / Voltage Reversal		x	x	Safety / Abuse-Electrical					
		5.4	Partial Short Circuit		x	x	Safety / Abuse-Electrical					
Ellicert Batteries	(H)EV		Certification scheme for battery cells and packs for rechargeable electric and hybrid vehicles								x	
		4	Certification Process	x		x						
		6.1 Test 1	Vibration	x		x	Safety / Abuse-Mechanical					
		6.2 Test 2	Thermal Cycle	x		x	Safety / Abuse-Mechanical					
		6.3 Test 3	Low Pressure	x		x	Safety / Abuse-Mechanical					
		6.4 Test 4	Thermal Stability	x		x	Safety / Abuse-Thermal					
		6.5 Test 5	Forced Charge	x		x	Safety / Abuse-Electrical					
		6.6 Test 6	Forced Discharge	x		x	Safety / Abuse-Electrical					
		6.7 Test 7	Shock or Jolt	x		x	Safety / Abuse-Mechanical					
		6.8 Test 8	Crush	x		x	Safety / Abuse-Mechanical					
		6.9 Test 9	Penetration	x		x	Safety / Abuse-Mechanical					
		6.10 Test 10	External Short-Circuit	x		x	Safety / Abuse-Electrical					
		6.11 Test 11	Fall	x		x	Safety / Abuse-Mechanical					
		6.12 Test 12	Immersion	x		x	Safety / Abuse-Mechanical					
		6.13 Test 13	Real or Simulated Outside Fire	x		x	Safety / Abuse-Thermal					

Despite our care we do not claim to cover all standards and that all test topics have been given here. The organisations that categorised the available test standards cannot be kept responsible for your decisions.

The involved institutes of the survey are:

