



中国汽车技术研究中心
China Automotive Technology & Research Center



4th EVS meeting in Beijing

Safety Standards of EV and battery in China

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Safety Standards on vehicle level in China

No.	Title	equivalent	status
GB/T 18384-2001	EV Safety specifications – Part 1: RESS	ISO 6469.- 2001	Under revise
	Part 2: functional safety means and protection against failures		
	Part 3: Protection of persons against electric hazards		
GB/T 19751-2005	HEV safety requirement	/	valid
GB/T 24549-2009	FCV safety requirement	/	

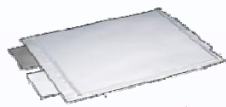


Safety Standards on vehicle level under development in China

No.	Title	equivalent
GB/T XXXX	Post crash requirement for EV	ISO 6469.4 ECE R94, R95



Research object of battery safety



Material, production process
the basic safety



Modularization
Increase protect



BMS, relay, fuse, case,
System protection

Overall arrangement, passive/active
protection, thermal management,
communication, functional safety

Battery safety is achieved
through layers of protection:





Research object of battery safety

- ❑ Battery safety involves interactions from cell component to the whole vehicle level.
- ❑ Unsafe cell is hard to be made into a system by the use of a design or operating parameters that can ensure highly reliable and safe system.
- ❑ An apparently robust cell can fail due to the improper choice of module/pack system parameters.
- ❑ Cell/battery manufacturers and vehicle OEMs should work very closely together to ensure the safety of battery system.
- ❑ The safety standards of battery should include cell, module, back/system, vehicle level.



Battery safety standards published in China

QC/T 741-2006 Ultra-capacitors for electric vehicles.

QC/T 742-2006 Lead-acid batteries for electric vehicles

QC/T 743-2006 Li-ion battery for electric vehicles

QC/T 744-2006 Nickel-metal hydride batteries for electric vehicles

GB/Z 18333.2-2001 Zinc-air batteries for electric road vehicles

QC/T 897-2011 Technical specification of Battery Management System for Electric vehicles

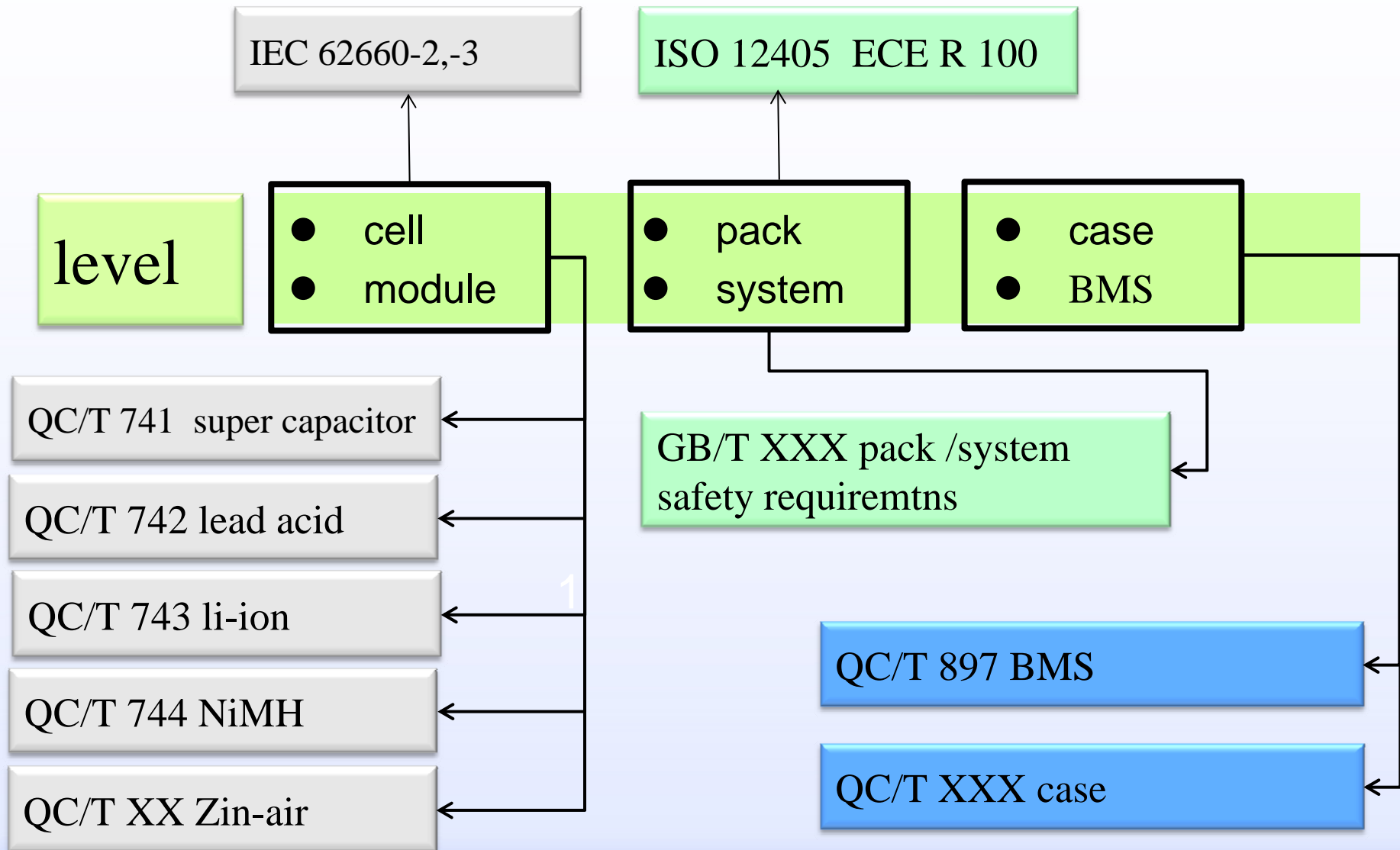


battery safety standards under development

GB/T XXXX	Electrically propelled road vehicles — Test specification for lithium-ion traction battery packs and systems — Part 3: Safety requirement
QC/T 741	Ultra-capacitors
QC/T 743	Li-ion Battery
QC/T 744	NiMH batteries
QC/T XXX	Zinc-air battery



Overview of battery safety standards





Thank you for your attention

